UNITED STATES
DEPARTMENT OF AGRICULTURE
Miscellaneous Publication No. 203

Washington, D. C. November 1934

COTTON AND COTTONSEED

A list of the publications of the United States Department of Agriculture on these subjects, including early reports of the United States Patent Office

Compiled by

RACHEL P. LANE

Junior Library Assistant
Division of Cotton and Other Fiber Crops and Diseases
Bureau of Plant Industry

Under the Direction of

EMILY L. DAY

Library Specialist in Cotton Marketing
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United States Department of Agriculture, Bureau of Agricultural Economics, Division of Cotton Marketing Branch.

Indexes and bibliographies:

ALLEN, J. M. CHECK LIST OF PUBLICATIONS ISSUED BY THE BUREAU OF PLANT INDUSTRY, UNITED STATES DEPARTMENT OF AGRICULTURE, 1901–20 AND BY THE DIVISIONS AND OFFICES WHICH COMBINED TO FORM THIS BUREAU 1862–1901. U.S. Dept. Agr. Libr. Bibliog. Contrib. 3, 124 pp. 1921. [Mimeographed.]

HANDY, R. B., and CANNON, M. A. LIST BY TITLES OF PUBLICATIONS OF THE UNITED STATES DEPARTMENT OF AGRICULTURE FROM 1840 TO JUNE, 1901, INCLUSIVE. U.S.Dept.Agr., Div. Pubs. Bull. 6, 216 pp. 1902.

HUNT, M. G. LIST OF PUBLICATIONS OF THE UNITED STATES DEPARTMENT OF AGRICULTURE FROM JANUARY, 1901, TO DECEMBER, 1925, INCLUSIVE. U.S. Dept. Agr. Misc. Pub. 9, 182 pp. 1927.

Supplementary to bulletin no 6, Division of Publications, issued in 1902 but duplicating that list for months of January-June 1901.

—— LIST OF PUBLICATIONS OF THE UNITED STATES DEPARTMENT OF AGRICULTURE FROM JANUARY, 1926, TO DECEMBER, 1930, INCLUSIVE. U.S. Dept. Agr. Misc. Pub. 153, 46 pp. 1932

Supplementary to U.S. Dept. Agr. Misc. Pub. 9.

UNITED STATES DEPARTMENT OF AGRICULTURE, DIVISION OF PUBLICATIONS. INDEX TO THE ANNUAL REPORTS OF THE UNITED STATES DEPARTMENT OF AGRICULTURE FOR THE YEARS 1837–93, INCLUSIVE. 252 pp. 1896.

All references * * * to subjects previous to 1862 are necessarily to Patent Office reports. Since and including 1862, when the Department of Agriculture was separated entirely from the jurisdiction of the Patent Office, references are to the reports of this Department.

———, BUREAU OF AGRICULTURAL ECONOMICS, DIVISION OF COTTON MARKETING. COTTON LITERATURE. v. 1–3, nos. 1–7. 1931–July 1933, also its predecessor, CURRENT LITERATURE ON COTTON, v. 1, nos. 1–6, July–December 1930. [Mimeographed.]

Selected references prepared in the Library of the United States Department of Agriculture with the cooperation of the Bureau of Agricultural Economics, Bureau of Plant Industry, and Bureau of Entomology. Compiled by Emily L. Day.

COTTON AND COTTONSEED

A LIST OF PUBLICATIONS OF THE UNITED STATES DEPARTMENT OF AGRICULTURE ON THESE SUBJECTS, INCLUDING EARLY REPORTS OF THE UNITED STATES PATENT OFFICE

Compiled by RACHEL P. LANE, *junior library assistant, Division of Cotton and Other Fiber Crops and Diseases, Bureau of Plant Industry,* under the direction of EMILY L. DAY, *library specialist in cotton marketing, Bureau of Agricultural Economics.*

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INTRODUCTION

This list contains references to cotton and cottonseed in the printed and mimeographed publications of the United States Department of Agriculture from 1841 through June 1933, including the reports of the Agricultural Division of the United States Patent Office, through which Federal aid to agriculture was administered from 1839 to 1862. References found in the annual reports of the Department through 1900 have been included. Such references in the annual reports of the Department and of the Bureaus since that date have not been included, as they may be found in Index to Publications of the United States Department of Agriculture 1901–1925, by Bradley and Hunt, 1932. The Journal of Agricultural

Research and the Monthly Weather Review were the only periodicals examined.

The classification of entries follows that used in Cotton Literature—Selected References, a mimeographed periodical issued monthly by the Department library. The abbreviations used are those listed in United States Department of Agriculture Department Bulletin 1330, Abbreviations Employed in Experiment Station Record for Titles of Periodicals.

A detailed author and subject index is included. References in the index are to item numbers and not to page numbers.

The printed publications included in this list were issued by the Government Printing Office except where otherwise stated. Mimeographed publications were issued by the bureau indicated in the reference. Many of the publications listed are no longer available for distribution but may be seen in libraries that are depositories for United States Government publications, and in other libraries. (See appendix for list of depository libraries.) Printed publications available for distribution are listed in Miscellaneous Publication 60, List of Available Publications of the United States Department of Agriculture, January 2, 1932. Mimeographed publications when available may be obtained from the issuing bureau or office.

PLANT CHARACTERISTICS AND DEVELOPMENT

ARMSTRONG, G. M., and ALBERT, W. B. (1)
A STUDY OF THE COTTON PLANT WITH ESPECIAL REFERENCE TO ITS NITROGEN CONTENT. Jour. Agr. Research 42: 689–703, illus. 1931.
Literature cited, pp. 702–703.

——— (2)
THE TOUGHNESS OF COTTON BOLLS IN RELATION TO AGE AND NUTRIENT SUPPLY AS MEASURED BY PRESSURE TESTS. Jour. Agr. Research 36: 1011–1025, illus. 1928.
Literature cited, pp. 1024–1025.

BECKETT, R. E. (3)
BUDDING AND GRAFTING TRIALS WITH COTTON AND RELATED PLANTS. Circ. 267, 15 pp. illus. 1933.
Literature cited, pp. 13–14.
"The budding and grafting trials at the United States Acclimatization Garden, near Bard, Calif., show not only that widely different species of *Gossypium* can be successfully united by these methods, but that related genera also can be budded and grafted with species of *Gossypium*" (p. 13).

——— (4)
GROWTH OF FRUITING PARTS IN GOSSYPIUM CERNUUM, AN ASIATIC COTTON. Jour. Agr. Research 35: 97–106, illus. 1927.
While results of studies indicate that "Garo Hill [*Gossypium cernuum* (Tod.)] differs but little in its growth periods from the American upland varieties or the American Egyptian and the sea-island varieties * * * the data are of interest as a further contribution to the available information on the fruiting habits of the cotton plant in relation to production under bollweevil conditions" (p. 97).

——— and HUBBARD, J. W. (5)
THE SHEDDING OF 4-LOCK AND 5-LOCK BOLLS IN UPLAND COTTON. Tech. Bull. 277, 16 pp., illus. 1932.
Data collected at United States Cotton Breeding Field Station at Greenville, Tex., in 1925, and at United States Acclimatization Garden, Bard, Calif., in 1926 and 1927. Lone Star and Acala varieties were used.
It is concluded that 5-lock bolls may have a greater tendency to abort than 4-lock bolls. "Also, 5-lock bolls are shown to be influenced by environmental and cultural conditions to a greater extent both in the number produced and in the rate of shedding, than are 4-lock bolls" (p. 15).

BRIGGS, L. J., and SHANTZ, H. L. (6)
RELATIVE WATER REQUIREMENT OF PLANTS. Jour. Agr. Research 3: 1–64, illus. 1914.
Literature cited, pp. 62–63. Cotton was among the plants studied.

CASKEY, CHARLES, JR., and GALLUP, W. D. (7)
CHANGES IN THE SUGAR, OIL, AND GOSSYPOL CONTENT OF THE DEVELOPING COTTON BOLL. Jour. Agr. Research 42: 671–673, illus. 1931.
Literature cited, p. 673.

COOK, O. F. (8)
THE ABORTION OF FRUITING BRANCHES IN COTTON. Bur. Plant Indus. Circ. 118: 11–16. 1913.
"There is an inverse ratio of growth to fertility in cotton * * * The general reason for this is the competition of the vegetative branches with the fruiting branches."

——— and MEADE, R. M. (9)
ARRANGEMENT OF PARTS IN THE COTTON PLANT. Bur. Plant. Indus. Bull. 222, 26 pp., illus. 1911.

Cook, O. F. (10)
BRACHYSM, A HEREDITARY DEFORMITY OF COTTON AND OTHER PLANTS. Jour. Agr. Research 3: 387–400, illus. 1915.
"Brachysm is a term proposed to designate the shortening of the vegetative internodes of plants * * * Brachytic variations are of frequent occurrence in cotton, giving rise to the so-called 'cluster' and 'limbless' varieties, and afford unusually favorable opportunities for learning the nature and physiological significance of such variations" (p. 399).

——— (11)
DIMORPHIC BRANCHES IN TROPICAL CROP PLANTS: COTTON, COFFEE, CACAO, THE CENTRAL AMERICAN RUBBER TREE, AND THE BANANA. Bur. Plant Indus. Bull. 198, 64 pp., illus. 1911.

——— (12)
MORPHOLOGY OF COTTON BRANCHES. Bur. Plant Indus. Circ. 109: 11–16. 1913.

——— McLachlan, Argyle and Meade, R. M. (13)
A STUDY OF DIVERSITY IN EGYPTIAN COTTON. Bur. Plant Indus. Bull. 156, 60 pp., illus. 1909.
The diversity found in Egyptian cotton in Arizona is of four different kinds, "evidently arising from different physiological factors", as follows: Hybridization caused by cross-fertilizing insects; incomplete acclimatization; the phenomenon of accomodation of different plants to differences in physical environment; and changes in the growth rate of various parts of the individual plant.

Dewey, L. H. (14)
PRINCIPAL COMMERCIAL PLANT FIBERS. Yearbook 1903: 387–398, illus. 1904.
Cottons, pp. 388–390. Plant characteristics are described for American upland cotton, sea-island, Egyptian, India, and Peruvian (often called kidney cotton.) Pictures of leaves and flowers of American upland, sea island and India cottons are given in figures 1–3.

Duvall, Louise, compiler. (15)
REFERENCES FOR THE STUDY OF THE CHEMISTRY OF THE COTTON PLANT AND ITS PRODUCTS. Agr. Libr. Notes 1 (4): 62–65, 1926. [Mimeographed.]

Eaton, F. M. (16)
CELL-SAP CONCENTRATION AND TRANSPIRATION AS RELATED TO AGE AND DEVELOPMENT OF COTTON LEAVES. Jour. Agr. Research 40: 791–803, illus. 1930.
Literature cited, pp. 802–803.
"The experimental plants were of the Pima variety of Egyptian cotton grown as a part of a water-requirement series at Sacaton, Ariz., in 1927" (p. 791).

——— (17)
EARLY DEFLORATION AS A METHOD OF INCREASING COTTON YIELDS, AND THE RELATION OF FRUITFULNESS TO FIBER AND BOLL CHARACTERS. Jour. Agr. Research 42: 447–462, illus. 1931.

——— (18)
LEAF TEMPERATURES OF COTTON AND THEIR RELATION TO TRANSPIRATION, VARIETAL DIFFERENCES, AND YIELDS. Tech. Bull. 91, 40 pp., illus. 1929.
Literature cited, pp. 37–39.

——— (19)
ROOT DEVELOPMENT AS RELATED TO CHARACTER OF GROWTH AND FRUITFULNESS OF THE COTTON PLANT. Jour. Agr. Research 43: 875–883, illus. 1931.
Literature cited, pp. 882–883. The experimental plants were grown at the United States Field Station, Sacaton, Ariz., in 1927.

Harris, J. A., Lawrence, J. V., and Lawrence, Z. W. (20)
THE CHLORID CONTENT OF THE LEAF TISSUE FLUIDS OF EGYPTIAN AND UPLAND COTTON. Jour. Agr. Research 28: 695–704, illus. 1924.
Literature cited, p. 704
Investigations at the United States Field Station in the Gila River Valley at Sacaton, Ariz., show that "the chlorid content is higher in the tissue fluids of the Egyptian than in those of upland cottons * * * The higher chlorid content may indicate a greater capacity of the Egyptian type for growth on saline land" (p. 704).

HARRIS, J. A., and PASCOE, T. A. (21)
FURTHER STUDIES ON THE RELATIONSHIP BETWEEN THE CONCENTRATION OF THE SOIL SOLUTION AND THE PHYSICOCHEMICAL PROPERTIES OF THE LEAF-TISSUE FLUIDS OF COTTON. Jour. Agr. Research 41: 767–788, illus. 1930.
Literature cited, p. 788.

——— and others. (22)
THE LEAF-TISSUE FLUIDS OF EGYPTIAN COTTONS. Jour. Agr. Research 31: 1027–1033, illus. 1925.
Literature cited, p. 1033.
"While the Egyptian varieties apparently differ among themselves, all of the six varieties here considered have a higher osmotic concentration and specific electrical conductivity than the upland varieties (Acala, Meade, and Lone Star) with which they have been compared. The two types apparently do not differ in the ratio of specific electrical conductivity to freeezing-point depression" (p. 1033).

——— (23)
THE RELATIONSHIP BETWEEN THE CONCENTRATION OF THE SOIL SOLUTION AND THE PHYSICOCHEMICAL PROPERTIES OF THE LEAF-TISSUE FLUIDS OF EGYPTIAN AND UPLAND COTTON. Jour. Agr. Research 32: 605–647, illus. 1926.
Literature cited, pp. 646–647.

——— HOFFMAN, C. T., and HOFFMAN, W. F. (24)
SULPHATE CONTENT OF THE LEAF-TISSUE FLUIDS OF EGYPTIAN AND UPLAND COTTON. Jour. Agr. Research 31: 653–661, illus. 1925.
Literature cited, p. 661.
"The sulphate content of the upland varieties (Meade and Lone Star) is higher than that of the Egyptian variety (Pima). The differences are clearly significant in comparison with their probable errors and range from 3 to 4 grams per liter, or from 18 to 28 percent of the upland value" (p. 660).

——— and others. (25)
THE TISSUE FLUIDS OF EGYPTIAN AND UPLAND COTTONS AND THEIR F_1 HYBRID. Jour. Agr. Research 27: 267–328, illus. 1924.
Literature cited, pp. 325–327.
"This paper has a twofold purpose: (*a*) The presentation of the results of an investigation of the physicochemical properties of the leaf tissue fluids of Egyptian and upland cotton as grown under irrigation at Sacaton, Ariz.; (*b*) a comparison of the properties of the leaf tissue fluids of the F_1 hybrid between these two cottons with those of the two parent types" (p. 267).

HUBBARD, J. W. (26)
FARM STUDY OF THE COTTON PLANT. Farmers' Bull. 1661, 18 pp., illus. 1931.
The structure, growth, and functions of each part of the plant are described.

——— (27)
ROOT CONSTRICTION OF COTTON PLANTS IN THE SAN JOAQUIN VALLEY OF CALIFORNIA. Jour. Agr. Research 44: 39–47, illus. 1932.

——— and HERBERT, F. W. (28)
ROOT DEVELOPMENT OF COTTON PLANTS IN THE SAN JOAQUIN VALLEY OF CALIFORNIA. Circ. 262, 8 pp., illus. 1933.

KEARNEY, T. H., and HARTER, L. L. (29)
THE COMPARATIVE TOLERANCE OF VARIOUS PLANTS FOR THE SALTS COMMON IN ALKALI SOILS. Bur. Plant Indus. Bull. 113, 22 pp., illus. 1907.
Results with cotton (*Gossypium*), pp. 9–10. The Jannovitch Egyptian variety of cotton (*Gossypium barbadense*) and the Griffin upland variety (*G.hirsutum*) were used. Limits of endurance of cotton seedlings of salts of magnesium and sodium, table II (p. 10). "The most marked difference in resistance between the two species of Gossypium appear in the presence of sodium carbonate and sodium bicarbonate. Egyptian cotton (*Gossypium barbadense*) can endure twice as concentrated a solution of the carbonate and nearly twice as concentrated a solution of the bicarbonate as can upland cotton (*G.hirsutum*). In resistance to magnesium chlorid and to sodium chlorid, also, *Gossypium barbadense* is slightly superior to *G.hirsutum*" (p. 10).

KEARNEY, T. H. (30)
DEVELOPMENT OF THE COTTON BOLL AS AFFECTED BY REMOVAL OF THE INVOLUCRE. Jour. Agr. Research 38: 381–393, illus. 1929.
Experiments were conducted at the United States Field Station, Sacaton, Ariz., in 1921. "The results * * * described in this paper point to the conclusion that the involucre of Gossypium plays an important part in the development of the flower and boll which it subtends. Suppression of this organ on plants of Pima cotton (Egyptian type) at the time of anthesis caused a marked reduction in the size and weight of the boll, in the weight of the seeds, and in the abundance of the lint" (p. 392).
——— and HARRISON, G. J. (31)
VARIATION IN SEED FUZZINESS ON INDIVIDUAL PLANTS OF PIMA COTTON. Jour. Agr. Research 37: 465–472, illus. 1928.
"Rather high and very significant negative correlations between the height of the fruiting branch and the grade of fuzziness of the seeds borne thereon indicate a strong tendency for the bolls on the lower fruiting branches to have fuzzier seeds than the bolls on the higher branches" (p. 471).
KING, C. J. (32)
DEVELOPMENT OF AXILLARY BUDS ON FRUITING BRANCHES OF PIMA AND UPLAND COTTON. Jour. Agr. Research 41: 697–714, illus. 1930.
LOOMIS, H. F. (33)
DEVELOPMENT OF FLOWERS AND BOLLS OF PIMA AND ACALA COTTON IN RELATION TO BRANCHING. Dept. Bull. 1365, 28 pp., illus. 1927.
Literature cited, p. 27.
MCCLELLAND, C. K., and NEELY, J. W. (34)
THE ORDER, RATE, AND REGULARITY OF BLOOMING IN THE COTTON PLANT. Jour. Agr. Research 42: 751–763, illus. 1931.
Literature cited, p. 763.
MCLACHLAN, ARGYLE. (35)
THE BRANCHING HABITS OF EGYPTIAN COTTON. Bur. Plant Indus. Bull. 249, 28 pp., illus. 1912.
Results of investigations in Arizona and California during the seasons of 1909 and 1910. "To place the growing of Egyptian cotton in the Southwest on a practical basis, cultural control of the production and development of vegetative and fruiting branches must be established."
MARTIN, R. D., BALLARD, W. W., and SIMPSON, D. M. (36)
GROWTH OF FRUITING PARTS IN COTTON PLANTS. Jour. Agr. Research 25: 195–208, illus. 1923.
"A comparison of similar phases of plant growth and development was obtained on several varieties under widely different environmental conditions—namely, Lone Star, Acala, Durango, and Pima Egyptian, at Sacaton, Ariz., in 1921 and 1922; Lone Star, near Greenville, Tex., in 1922; and Meade and sea island near Charleston, S.C., in 1922" (p. 206).
MEADE, R. M. (37)
SUPERNUMERARY CARPELS IN COTTON BOLLS. Bur. Plant Indus. Circ. 111: 25–28, illus. 1913.
The author concludes that low temperatures might induce this abnormality, which has occurred at Lanham, Md., Glendale, Calif., and Clarksville, Tex.
SHANTZ, H. L., and PIEMEISEL, L. N. (38)
THE WATER REQUIREMENT OF PLANTS AT AKRON, COLO. Jour. Agr. Research 34: 1093–1190, illus. 1927.
The results here recorded are part of an extensive experiment begun by L. J. Briggs, while in charge of the Office of Biophysical Investigations, and the senior author, then of the Office of Alkali and Drought Resistant Plant Investigations. "Cotton was included in the experiments each year at Akron. Notwithstanding the fact that cotton was far from its natural range the water requirement of that crop, 574±9, was as low as for oats and almost as low as for wheat" (p. 1109).
STANFORD, E. T., and VIEHOEVER, ARNO. (39)
CHEMISTRY AND HISTOLOGY OF THE GLANDS OF THE COTTON PLANT, WITH NOTES ON THE OCCURRENCE OF SIMILAR GLANDS IN RELATED PLANTS. Jour. Agr. Research 13: 419–436, illus. 1918.
Literature cited, pp. 434–435. Second paper of a series on the chemistry of the cotton plant, wth special reference to upland cotton.

TYLER, F. J. (40)

THE NECTARIES OF COTTON. Bur. Plant Indus. Bull. 131: 45–54, illus. 1908.

"Some natural method of grouping the species of cotton is greatly needed. The cultivated species especially have been confused since the time of Linnaeus, and the genus is generally considered very difficult.

"It is believed that the interesting diversity which has been noticed between the nectaries of different cottons will form diagnostic characters of considerable value." Lists species arranged in four groups having similar nectaries, and describes the nectaries in each species.

UNITED STATES DEPARTMENT OF AGRICULTURE, BUREAU OF PLANT INDUSTRY LIBRARY. (41)

BOTANY: CURRENT LITERATURE. January 31, 1919—date, biweekly. [Mimeographed.]

A bibliography compiled from material received in the Department of Agriculture library. Nos. 1–151 have title: Current author entries; nos. 152–183 have title: Current botanical literature.

Publications on the botany and diseases of the cotton plant are included in the issues.

VIEHOVER, ARNO, CHERNOFF, L. H., and JOHNS, C. O. (42)

CHEMISTRY OF THE COTTON PLANT, WITH SPECIAL REFERENCE TO UPLAND COTTON. Jour. Agr. Research 13: 345–352, illus. 1918.

Literature cited, pp. 351–352. This paper is the first of a series on the chemistry of the cotton plant.

"The main purpose of the investigation reported in this paper was to isolate the substance which proves so attractive to the boll weevil, an attraction causing such disastrous losses to the cotton industry. While this paper chiefly concerns the isolation of the glucosids and their products of hydrolysis, preliminary studies of an ethereal oil which has been isolated from different parts of the cotton plant are also discussed. This oil has been found decidedly attractive to the boll weevil" (p. 345).

BREEDING AND GENETICS

COOK O. F. (43)

COTTON IMPROVEMENT THROUGH TYPE SELECTION, WITH SPECIAL REFERENCE TO THE ACALA VARIETY. Tech. Bull. 302, 62 pp., illus. 1932.

"The new method is called type selection, in order to direct attention to the essential requirement of recognizing a single type of plant as the basis of selection and thus maintaining the uniformity of the stock. To appreciate and apply the new method to the best advantage, it is necessary to analyze and discriminate carefully between type selection and several other methods that have been used in the past, including mass selection, individual selection, and progeny selection" (p. 58). Though most of the data given in this bulletin are based on the study of Acala cotton, the methods are applicable to other varieties also.

——— (44)

COTTON SELECTION ON THE FARM BY THE CHARACTERS OF THE STALKS, LEAVES, AND BOLLS. Bur. Plant Indus. Circ. 66, 23 pp. 1910.

——— (45)

DANGER IN JUDGING COTTON VARIETIES BY LINT PERCENTAGES. Bur. Plant Indus. Circ. 11, 16 pp. 1908.

"The safest and most effective way of using lint percentages for agricultural and breeding purposes is for determining a lint index, representing the amount of lint produced by 100 seed" (p. 16). Examples of lint indexes of different varieties of cotton compared with lint percentages, table I (p. 15).

——— (46)

DIMORPHIC LEAVES OF COTTON AND ALLIED PLANTS IN RELATION TO HEREDITY. Bur. Plant. Indus. Bull. 221, 59 pp., illus. 1911.

"The facts of dimorphism are worthy of being taken into account in breeding, as affording additional varietal characters and as one of the means of recognizing variations from the standard or typical form of a select variety. Dimorphism must also receive attention in the study of the influence of environmental conditions on the expression of characters. In cotton and other tropical crop plants the modification of dimorphic differences represents one of the most serious disturbances of normal heredity induced by external conditions" (p. 51).

COOK, O. F. (47)
HEREDITY AND COTTON BREEDING. Bur. Plant Indus. Bull. 256, 113 pp., illus. 1913.
"This paper outlines some new methods and standpoints for the study of heredity, with applications to practical problems in the breeding of cotton. It shows how problems of heredity and methods of breeding can be simplified by a more definite recognition of the fact that the expression of characters is distinct from transmission. In addition * * * detailed information is given regarding the habits of the various types of cotton, the effects of external conditions, and the behavior of the different characters in heredity" (p. 3).

——— (48)
MUTATIVE REVERSIONS IN COTTON. Bur. Plant Indus. Circ. 53, 18 pp. 1910.
"The uniformity of the progeny of mutative variations renders them greatly superior to hybrids for breeding purposes. The possibility of obtaining superior mutative reversions from later generations of dilute hybrid stocks is worthy of investigation, especially in cases where desirable Mendelian combinations are not obtained in the earlier generations of hybrids.
"The Hindi variations of the Egyptian are similar in their characters and behavior to some of the reversions that appear in Upland varieties and may prove to be forms of reversion rather than results of recent contamination with a distinct type of cotton" (p. 17).

——— (49)
REAPPEARANCE OF A PRIMITIVE CHARACTER IN COTTON HYBRIDS. Bur. Plant Indus. Circ. 18, 11 pp. 1908.
"The facts considered in this brief report are incidental results of experiments undertaken for the purpose of acclimatizing in the United States weevil-resistant varieties of cotton from Central America and of hybridizing them with our United States varieties" (p. 3.)

——— (50)
THE SUPERIORITY OF LINE BREEDING OVER NARROW BREEDING. Bur. Plant Indus. Bull. 146, 45 pp. 1909.

——— (51)
SUPPRESSED AND INTENSIFIED CHARACTERS IN COTTON HYBRIDS. Bur. Plant Indus. Bull. 147, 27 pp. 1909.
Records of observations made on Kekchi, upland, and Egyptian cottons in Texas and Oklahoma.

HARRISON, G. J. (52)
METAXENIA IN COTTON. Jour. Agr. Research 42: 521–544. 1931.
Literature cited, pp. 543–544.
"The metaxenia effect on growth of lint of cotton suggests the danger of growing two or more varieties of widely divergent staple lengths in the same vicinity, as the uniformity of both products is likely to be impaired to the extent that cross-fertilization occurs."

HARTLEY, C. P. (53)
INJURIOUS EFFECTS OF PREMATURE POLLINATION; WITH GENERAL NOTES ON ARTIFICIAL POLLINATION AND THE SETTING OF FRUIT WITHOUT POLLINATION. Bur. Plant Indus. Bull. 22, 48 pp., illus. 1902.
Experiments with cotton blossoms, pp. 19–22.

KEARNEY, T. H. (54)
BREEDING NEW TYPES OF EGYPTIAN COTTON. Bur. Plant Indus. Bull. 200, 39 pp., illus. 1910.
Summary of 7 years' work in the southwestern part of the United States. Describes the Yuma and the Somerton varieties of Egyptian cotton, in addition to several other new superior strains.

——— (55)
CORRELATIONS OF SEED, FIBER, AND BOLL CHARACTERS IN COTTON. Jour. Agr. Research 33: 781–796, illus. 1926.
Literature cited, p. 796.

——— (56)
COTTON BREEDING TO-DAY WORKS WITH MAIN TYPES KNOWN IN REMOTE PAST. Yearbook 1930: 182–190, illus. 1930.
Sea-island, Egyptian, upland, and Asiatic varieties are described and histories given. Methods of breeding discussed, pp. 7–8.

KEARNEY, T. H., and PEEBLES, R. H. (57)
HERITABILITY OF DIFFERENT RATES OF SHEDDING IN COTTON. Jour. Agr. Research 33: 651–661, illus. 1926.
Literature cited, pp. 660–661.

——— (58)
HERITABLE VARIATIONS IN AN APPARENTLY UNIFORM VARIETY OF COTTON. Jour. Agr. Research 21: 227–242, illus. 1921.
"Evidence is presented in this paper of the occurrence of heritable variations in the Pima variety of American Egyptian cotton, which is probably the most uniform variety of cotton now grown on an extensive scale" (p. 241.) Early history of the Pima variety, pp. 227–228.

——— (59)
INHERITANCE OF PETAL SPOT IN PIMA COTTON. Jour. Agr. Research 27: 491-512, illus. 1924.

——— and PEEBLES, R. H. (60)
INHERITANCE OF RATE OF SHEDDING IN A COTTON HYBRID. Jour. Agr. Research 34: 921–936. 1927.
"The writers have presented evidence that different species and varieties of cotton differ consistently in the rate of shedding. They have shown also that in a hybrid between Pima Egyptian and Acala upland cottons the second generation was more variable than the first and that individual F_2 plants grown under identical conditions differed significantly in the percentage of buds and of young bolls lost by abscission. Third-generation progenies have been grown subsequently, and the data obtained from them are set forth in the present paper. The new evidence confirms the conclusion that abscission of the flower buds and young bolls in cotton is determined partly by genetic factors" (p. 921.)

——— and HARRISON, G. J. (61)
INHERITANCE OF SMOOTH SEEDS IN COTTON. Jour. Agr. Research 35: 193–217, illus. 1927.
Literature cited, p. 217.
Report of an investigation made at the United States Field Station, Sacaton, Ariz. "This paper presents the evidence, from crosses between smooth-seeded and fuzzy-seeded cottons, that the inheritance of this character is mainly of a simple Mendelian type" (p. 215.)

——— (62)
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Literature cited, pp. 301–302.
"The subjects treated in the following pages are: (1) The origin of Egyptian cotton, so far as it throws light upon the heterogeneous nature of this type and thus affords a possible explanation of its mutability; (2) the evidence for the mutational origin of the several varieties now grown commercially in Egypt; (3) the better known history of the Arizona varieties and the reasons for concluding that they have arisen by mutation, and (4) the evidence afforded by Egyptian cotton that mutability may be a result of hybridization" (p. 288.)

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Reports investigations made at the Cooperative Testing Station, Sacaton, Ariz., 1917–20, on a cross between the Holdon variety of upland cotton and the Pima (American Egyptian) variety. The results "have a practical bearing in throwing light upon the nature of the variants to be looked for in a field of Egyptian or of upland cotton which has been exposed to accidental cross-pollination by the other type. This knowledge should be useful both in determining the fact of whether such cross-pollination has occurred and in guiding the work of roguing to maintain supplies of pure planting seed" (p. 2.). Definition of the characters measured or graded, pp. 7–11.

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SELECTIVE FERTILIZATION IN COTTON. Jour. Agr. Research 27: 329–340, illus. 1924.
Literature cited, p. 340.
"The writers, assisted by Max Willett and Dow D. Porter, have now succeeded in obtaining conclusive evidence that selective fertilization, in favor of the like pollen, takes place in upland, as well as in Egyptian cotton. The purpose of this paper is to describe the experiments which yielded this evidence" (p. 329). The experiments were conducted at the cooperative testing station at Sacaton, Ariz., in 1922 and 1923.

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COAD, B. R. (145)

COTTON INSECT CONTROL MEASURES SHOULD FIT INTO THE FARM SCHEME. Yearbook 1930: 197–202. 1930.

Damage by the following insects is considered, with suggestions for control measures: Bollweevil, cotton leaf worm, cotton bollworm, cotton louse, cotton flea hopper and related species, and minor insects.

——— (146)

FLOODS DISTURB THE BALANCE OF NATURE IN WORLD OF INSECTS. Yearbook 1927: 312–317, illus. 1928.

"The laboratory of the cotton-insect investigations of the Bureau of Entomology, located at Tallulah, La., was in the approximate center of the flooded territory [in 1927] * * * Consequently, the entomologists of this organization have been especially well situated for studying the effect of the floods on the insect problems, and particularly those relating to cotton." The effect of the flood on infestation by bollweevils, leaf worms and fall army worms is discussed.

——— and HOWE, R. W. (147)

INSECT INJURY TO COTTON SEEDLINGS. Jour. Agr. Research 6: 129–140, illus. 1916.

Observations were made in the vicinity of Tallulah, La., during the spring of 1915. "It seems that mutilation of cotton seedlings may be produced by any of several insect pests. These consist of a number of species of lepidopterous larvae (cutworms, measuring worms, 'woolly-bear' larvae, tussock-moth larvae, etc.), grasshoppers, and leaf beetles" (p. 138).

——— (148)

INSECTS CAPTURED BY AIRPLANE ARE FOUND AT SURPRISING HEIGHTS. Yearbook 1931: 320–323. 1931

Bollweevils were found as high as 1,000 feet; cotton flea hoppers at 5,000 feet; and pink bollworm moths were found as high as 3,000 feet. "These findings have a most important relation to many of the problems of insect repression or control."

FOLSOM, J. W. (149)

INSECT ENEMIES OF THE COTTON PLANT. Farmers' Bull. 1688, 29 pp., illus. 1932.

Revises and supersedes Farmers' Bull. 890, How Insects Affect the Cotton Plant and Means of Combating Them, by W. D. Pierce. 1924.

FULLAWAY, D. T. (150)

INSECTS OF COTTON IN HAWAII. Hawaii Agr. Expt. Sta. Bull. 18, 27 pp., illus. 1909.

"Accounts of all insects thus far known to attack the cotton plant in the Hawaiian Islands, together with suggestions for their control." Includes accounts of stem maggot, wireworms, cutworms, aphids, Japanese beetle, mealybug and scale insects, bollworm, leaf-folding caterpillar, stem borer, minor pests, and beneficial insects.

GLOVER, TOWNEND. (151)

INSECTS FREQUENTING THE COTTON-PLANT. U.S. Commr. Patents Rpt., 1855 (Agr.): 64–115. 1856.

Classifies insects according to the part of the plant most generally frequented by them.

——— (152)

INSECTS INJURIOUS TO THE COTTON PLANT IN FLORIDA. U. S. Commr. Patents Rpt., 1858 (Agr.): 271–272. 1859.

Cutworms and cotton-stainers, or red bugs, are described.

HARNED, R. W. (153)
CULTURE, INSECTICIDES, AND QUARANTINES HELP CONTROL COTTON PESTS. Yearbook 1933: 126–132, illus. 1933.
Condensed information on 12 important cotton insects in the United States, table 4 (pp. 127–128). Information includes common name of insect, scientific name, probable native home, distribution in the United States, nature of injury, crops other than cotton attacked, and control methods. The insects thus described are bollweevil, bollworm, cotton leaf worm, cotton flea hopper, tarnished plant bug, cotton plant bug, common red spider, cotton aphid, corn root aphid, pink bollworm, cotton leaf perforator, and Thurberia weevil.

HINDS, W. E. (154)
CARBON DISULPHID AS AN INSECTICIDE. Farmers' Bull. 799, 21 pp., 1917.
Fumigation of sacked cottonseed, p. 14.

HOWARD, L. O. (155)
INSECTS AFFECTING THE COTTON PLANT. Farmers' Bull. 47, 32 pp., illus. 1897.
"Reprinted, with revision by the author, from Bulletin 33, Office of Experiment Stations." Describes general appearance, habits, and life history, parasites and natural enemies, and remedies for cotton worm, or cotton caterpillar; cotton bollworm; Mexican cotton bollweevil; and includes brief notes on other cotton insects, such as cutworms, plant lice, leaf-feeding caterpillars, etc.

HUNTER, W. D. (156)
RELATION BETWEEN ROTATION SYSTEMS AND INSECT INJURY IN THE SOUTH. Yearbook 1911: 201–210. 1912.
"An attempt will be made in this paper to point out some of the general considerations that must be taken into account in connection with rotation practices which are coming to be generally followed in the Southern States."

MORRILL, A. W. (157)
PLANT-BUGS INJURIOUS TO COTTON BOLLS. Bur. Ent. Bull. 86, 110 pp., illus. 1910.
The conchuela, grain bug, pentatomid bugs, and insects of the squash-bug, leaf-bug, chinch-bug, and cotton-stainer families are described and methods of control are suggested.

PIERCE, W. D. (158)
DESCRIPTIONS OF SOME WEEVILS REARED FROM COTTON IN PERU. Dept. Rpt. 102. 16 pp., illus. 1915.
Listed according to systematic order. "All belong to the series Phytophaga, although the bruchids, or bean weevils, of the family Mylabridae do not belong to the subseries Rhynchophora, which contains the true weevils."

SANDERSON, E. D. (159)
MISCELLANEOUS COTTON INSECTS IN TEXAS. Farmers' Bull. 223, 24 pp., illus. 1905.
"The result of a year's work on the minor insect enemies of the cotton plant."

——— (160)
REPORT ON MISCELLANEOUS COTTON INSECTS IN TEXAS. Bur. Ent. Bull. 57, 63 pp., illus. 1906.

UNITED STATES DEPARTMENT OF AGRICULTURE. DIVISION OF ENTOMOLOGY. (161)
CATALOGUE OF THE EXHIBIT OF ECONOMIC ENTOMOLOGY AT THE WORLD'S INDUSTRIAL AND COTTON CENTENNIAL EXPOSITION, NEW ORLEANS, 1884–85. Div. Ent. Gen. Pub., 95 pp. 1888.
Insects affecting cotton, pp. 48–51.

——— DIVISION OF ENTOMOLOGY. (162)
REPORTS OF OBSERVATIONS AND EXPERIMENTS IN THE PRACTICAL WORK OF THE DIVISION, MADE UNDER THE DIRECTION OF THE ENTOMOLOGIST, TOGETHER WITH EXTRACTS FROM CORRESPONDENCE ON MISCELLANEOUS INSECTS. Div. Ent. Bull. (old ser.) 4, 102 pp., illus. 1884.
Partial contents: Preliminary report of observations upon insects injurious to cotton, orange, and sugarcane in Brazil, pp. 63–69. Also notes in "Extracts from correspondence."

WILSON, C. E. (163)
INSECT PESTS OF COTTON IN ST. CROIX AND MEANS OF COMBATING THEM. Virgin Islands Agr. Expt. Sta. Bull. 3, 20 pp., illus. 1923.
The life histories of some of the insects thus far known to attack cotton in St. Croix are given, and methods of combating the more destructive species are suggested. The author discusses the insects in order of their importance as regards attack, grouping them under two main headings—those attacking the leaf and stem, and those attacking the boll and flower.

ZEIMET, CARLO, and MCBATH, W. E. (164)
A BIBLIOGRAPHY ON THE USE OF AIRPLANES IN INSECT CONTROL TO MARCH 1, 1928. 17 pp. Bur. Ent. [n.d.] [Mimeographed].
References to articles on cotton dusting are included.

BOLLWEEVIL

GENERAL

BECKER, J. A. (165)
THE EFFECT OF THE BOLL-WEEVIL UPON THE COTTON PRODUCTION OF THE UNITED STATES. 7 pp., illus. Bur. Agr. Econ. [1929] [Mimeographed.]
Prepared for the International Cotton Congress at Vienna, and published in the International Cotton Bulletin, June 1924 issue.

BISHOPP, F. C. (166)
AN ANNOTATED BIBLIOGRAPHY OF THE MEXICAN COTTON BOLL WEEVIL. Bur. Ent. Circ. 140, 30 pp. 1911.

COOK, O. F. (167)
BOLLWEEVIL COTTON IN TEXAS. Dept. Bull. 1153, 20 pp., illus. 1923.
The term "bollweevil cotton" describes an abnormal luxuriance of the plants caused by bollweevil injury. Wider separation of rows and close spacing of plants within the row are recommended to avoid the condition. List of publications on weevil resistance and close spacing, pp. 19–20.

GALLOWAY, B. T. (168)
WORK OF THE BUREAU OF PLANT INDUSTRY IN MEETING THE RAVAGES OF THE BOLL WEEVIL AND SOME DISEASES OF COTTON. Yearbook 1904: 497–508. 1905.
The work is discussed under the following outline: Plant breeding and selection work; investigations of tropical cottons; diseases; diversificaton; cooperative demonstration farms; distribution of early-maturing varieties; and farmers' institute work.

HOWARD, L. O. (169)
THE MEXICAN COTTON-BOLL WEEVIL (*Anthonomus grandis* BOH.). Div. Ent. Circ. (ser. 2) 18, 8 pp., illus. 1897.
Revision of Div. Ent. Circ. (ser. 2) 14, same author and title, 1896.
"In this circular all of the essential points of the previous circulars have been repeated, the section on remedies has been entirely rewritten, and a paragraph has been added on the work of the weevil during 1896" (p. 1).

——— (170)
THE MEXICAN COTTON-BOLL WEEVIL IN 1897. Div. Ent. Circ. (ser. 2) 27, 7 pp. 1897.

HUNTER, W. D., and COAD, B. R. (171)
THE BOLL-WEEVIL PROBLEM. Farmers' Bull. 1329, 30 pp., illus. 1923.
Discusses the origin, spread, and distribution of the insect; life history and hibernation; control measures; and effect of control methods on the control of other insects.

——— and PIERCE, W. D. (172)
MEXICAN COTTON-BOLL WEEVIL. MESSAGE FROM THE PRESIDENT OF THE UNITED STATES TRANSMITTING A COMMUNICATION FROM THE SECRETARY OF AGRICULTURE SUBMITTING A REPORT ON THE MEXICAN COTTON-BOLL WEEVIL. Bur. Ent. Bull. 114, 188 pp., illus. 1912. (62d Cong., 2d sess., Senate Doc. 305.)
Supersedes Bureau of Entomology Bulletin 51, The Mexican Cotton Boll Weevil, by W. D. Hunter and W. E. Hinds, 1905. Summarizes results of investigations of the bollweevil up to December 31, 1911.

HUNTER, W. D. (173)
PRESENT STATUS OF THE COTTON-BOLL WEEVIL IN THE UNITED STATES. Yearbook 1904: 191–204, illus. 1905.

——— (174)
THE PRESENT STATUS OF THE MEXICAN COTTON BOLL WEEVIL IN THE UNITED STATES. Yearbook 1901: 369–380, illus. 1902.
This article describes the introduction of the insect in the United States in 1894 in Texas; distribution and dangers of its spread in 1901; and cultural methods for combating it. "There seems but little prospect for aid from machines designed for the destruction of the weevil." Map of eastern Texas showing the distribution of the weevil in 1901, p. 372.

——— (175)
SOME RECENT STUDIES OF THE MEXICAN COTTON BOLL WEEVIL. Yearbook 1906: 313–324, illus. 1907.
Studies were made during 1906 on the relation between precipitation and weevil damage; on early and late planting as a check to the insect; fall destruction of stalks in the field; and the work of predacious insects such as the native ant *Solenopsis geminata.*

——— (176)
THE STATUS OF THE COTTON BOLL WEEVIL IN 1909. Bur. Ent. Circ. 122, 12 pp., illus. 1910.
Includes map showing the regions in which the cotton bollweevil occurred in 1909.

——— (177)
THE STATUS OF THE MEXICAN COTTON BOLL MEEVIL IN THE UNITED STATES IN 1903. Yearbook 1903: 205–214, illus. 1904.
Plan of the bollweevil work of the Department of Agriculture (pp. 209–211).

HYSLOP, J. A. (178)
AN ESTIMATE OF THE DAMAGE BY SOME OF THE MORE IMPORTANT INSECT PESTS IN THE UNITED STATES. 21 pp. Bur. Ent. 1930. [Mimeographed.]
Bollweevil, p. 4. Damage as estimated by the United States Bureau of Crop Estimates [1910–1928] table II, (p. 21). Bollworm or corn-ear worm (*Heliothis obsoleta* Fab.), pp. 5–6.

UNITED STATES DEPARTMENT OF AGRICULTURE. (179)
STUDY AND INVESTIGATION OF BOLLWEEVIL AND HOG CHOLERA PLAGUES. LETTER FROM THE SECRETARY OF AGRICULTURE, TRANSMITTING INFORMATION REGARDING THE STUDY AND INVESTIGATION OF THE BOLL WEEVIL AND HOG CHOLERA PLAGUES, AS DIRECTED IN HOUSE RESOLUTION NO. 254, DATED SEPTEMBER 16, 1913. 25 pp. 1913. (63d Cong., 2d sess. H. Doc. 463.)
The work of the Bureau of Plant Industry in connection with the cotton bollweevil from 1904 to 1913, inclusive, pp. 1–8; a report of the work of the Bureau of Entomology on the Mexican cotton bollweevil, in pursuance of House Resolution No. 254, pp. 9–18.

——— COTTON COUNCIL. (180)
SUGGESTIONS FOR SECURING GREATER UNIFORMITY OF ACTION IN THE PRODUCTION OF COTTON UNDER BOLLWEEVIL CONDITIONS. 2 pp. 1922. [Mimeographed.]
"Because of differences in the climatic and economic conditions of the various cotton-producing States, we suggest that experiments and studies be made in each State in cooperation with the United States Department of Agriculture." It is suggested that studies and experiments be made along cultural, remedial, biological, chemical, and mechanical lines.

———COTTON COUNCIL. (181)
SUMMARY OF RECOMMENDATIONS FOR THE PRODUCTION OF COTTON UNDER BOLLWEEVIL CONDITIONS. 2 pp. 1922. [Mimeographed.]

——— BUREAU OF ENTOMOLOGY. (182)
THE DISPERSION OF THE BOLLWEEVIL IN 1911–22. 1912–23.
Title varies: 1911, The movement of the Mexican cotton bollweevil; 1912–14, The movement of the cotton bollweevil; 1915–17, The spread of the cotton bollweevil; 1918, The occurrence of the bollweevil; 1919, Distribution of the bollweevil. Publications for 1911–12 are Bureau of Entomology Circulars 146 and 167; those for 1920–22 are Department Circulars 163, 210, 266.

UNITED STATES DEPARTMENT OF AGRICULTURE. BUREAU OF ENTOMOLOGY (183)
PAPERS ON THE COTTON BOLLWEEVIL AND RELATED AND ASSOCIATED INSECTS. Bur. Ent. Bull. 63, 71 pp., illus. 1907.

Partial contents:—Hibernation and Development of the Cotton Bollweevil, by E. D. Sanderson (pp. 1–38); Notes on the Biology of Certain Weevils Related to the Cotton Bollweevil, by W. D. Pierce (pp. 39–44); An Ant Enemy of the Cotton Bollweevil (*Solenopsis geminata* Fab., var. *xyloni* McC.), by W. E. Hinds (pp. 45–48); A Predatory Bug Reported as an Enemy of the Cotton Bollweevil (*Apromerus spissipes* Say), by A. C. Morgan (pp. 49–54); The Cotton Stalk-Borer, by A. C. Morgan (pp. 63–66).

——— BUREAU OF ENTOMOLOGY. (184)
PROCEEDINGS OF THE EIGHTEENTH ANNUAL MEETING OF THE ASSOCIATION OF ECONOMIC ENTOMOLOGISTS. Bur. Ent. Bull. 60, 206 pp., illus. 1906.

Proceedings of meeting held at New Orleans, La., January 1–4, 1906.

Partial contents: Notes Upon a Little-Known Insect Enemy of Cotton and Corn, by Wilmon Newell (pp. 52–58) (Regarding *Cicada erratica* Osborn, found in Louisiana); A Consideration of the Cultural System for the Bollweevil in the Light of Recent Observations, by A. F. Conradi (pp. 107–111); Laboratory Methods in the Cotton Bollweevil Investigations, by W. E. Hinds (pp. 111–119); The Work of the State Crop Pest Commission of Louisiana on the Cotton Bollweevil, by Wilmon Newell (pp. 119–134).

——— BUREAU OF ENTOMOLOGY. (185)
PROCEEDINGS OF THE SEVENTEENTH ANNUAL MEETING OF THE ASSOCIATION OF ECONOMIC ENTOMOLOGISTS. Bur. Ent. Bull. 52, 123 pp., illus. 1905.

Report of meeting held at Philadelphia, Pa., December 29–30, 1904.

Notes on Cuban Insects, by M. T. Cook (pp. 28–29). It is stated that the bollweevil is very abundant. Some Observations on the Cotton Bollweevil, by E. D. Sanderson (pp. 29–41).

WEBB, J. L., and MERRILL, F. A. (186)
COTTON OR WEEVILS. Misc. Pub. 35 (rev. ed.), 17 pp., illus. 1930. Issued 1929; revised 1930.

Discussion of important facts about the bollweevil, the damage caused by it, and suggestions for poisoning.

BIOLOGY OF THE BOLLWEEVIL

COAD, B. R. (187)
FEEDING HABITS OF THE BOLLWEEVIL ON PLANTS OTHER THAN COTTON. Jour. Agr. Research 2:235–245, illus. 1914.

"In the course of the investigations on the biology of *Anthonomus grandis* at Victoria, Tex., during the summer of 1913, under the direction of Mr. W. D. Hunter, the writer was able to conduct a number of experiments on the possibility of the bollweevil's breeding in some of the native malvaceous plants. Since the results secured differ with the plants, they are grouped under the various species of plants tested" (p. 235).

——— (188)
RECENT STUDIES OF THE MEXICAN COTTON BOLLWEEVIL. Dept. Bull. 231, 34 pp., illus. 1915.

Technical experiments and observations on the relation between the typical bollweevil and the Arizona wild-cotton (or Thurberia) weevil, which was discovered in 1913, and changes in the habits of the bollweevil since it first entered the United States.

FENTON, F. A., and DUNNAM, E. W. (189)
BIOLOGY OF THE COTTON BOLLWEEVIL AT FLORENCE, S.C. Tech. Bull. 112, 76 pp., illus. 1929.

Report of study at Pee Dee Experiment Station, South Carolina, 1924–27.

FENTON, F. A., and DUNNAM, E. W. (190)
DISPERSAL OF THE COTTON BOLLWEEVIL, *Anthonomus grandis* BOH. Jour. Agr. Research 36: 135–149, illus. 1928.
Literature cited, p. 149.
"The cotton bollweevil has a pronounced habit of dispersal by flight during the summer months, either from one part of a field to another or between fields * * * Such factors as degree of minimum relative humidity, number of squares on the plants, number of weevils in the field, direction of moderate winds, or emergence of a definite generation of weevils, have little influence on the extended flight activities of this species. There is, however, a distinct relationship between degree of infestation in a field and weevil flights. When the percentage of infestation reaches a certain point, which has not yet been determined, these insects become restless and fly" (p. 149).

HINDS, W. E., YOTHERS, W. W., and HUNTER, W. D. (191)
HIBERNATION OF THE MEXICAN COTTON BOLL WEEVIL. Bur. Ent. Bull. 77, 100 pp., illus. 1909.
The information included in this bulletin was accumulated through the investigations and observations of the agents connected with the work during the seasons of 1902–07.

HOWE, R.W. (192)
STUDIES ON THE MEXICAN COTTON BOLL WEEVIL IN THE MISSISSIPPI VALLEY. Dept. Bull. 358, 32 pp., illus, 1916.

McINDOO, N. E. (193)
SENSES OF THE COTTON BOLL WEEVIL—AN ATTEMPT TO EXPLAIN HOW PLANTS ATTRACT INSECTS BY SMELL. Jour. Agr. Research 33: 1095–1141, illus. 1926.
Literature cited, pp. 1139–1141.

MALLY, F. W. (194)
THE MEXICAN COTTON BOLL WEEVIL. Farmers' Bull. 130, 30 pp., illus. 1901.
Life habits of the weevil and methods of extermination.

PIERCE, W. D. (195)
A NEW INTERPRETATION OF THE RELATIONSHIPS OF TEMPERATURE AND HUMIDITY TO INSECT DEVELOPMENT. Jour. Agr. Research 5: 1183–1191, illus. 1916.
"The principal data upon which the writer has based his studies include records of individual bollweevils (*Anthonomus grandis* Boh. and *A. g. thurberiae* Pierce), made by the members of the bollweevil force under the direction of Mr. W. D. Hunter and the writer at various localities in Texas, Louisiana, and Arizona throughout the period of years from 1902 to 1915" (p. 1183). Practical applications, p. 1191. "The cotton bollweevil must have food up to the time that it enters hibernation. Early harvesting and destruction of stalks before the low temperatures set in offer one of the most satisfactory methods of control." Graph showing the relation of temperature and humidity to cotton bollweevil activity, figure 1 (p. 1186).

——— (196)
THE OCCURRENCE OF A COTTON BOLLWEEVIL IN ARIZONA. Jour. Agr. Research 1: 89–[98], illus. 1913.
Describes and illustrates differences between the Arizona weevil, *Anthonomus grandis thurberiae* and the Mexican cotton bollweevil, *Anthonomus grandis* Boh.

SMITH, G. D. (197)
STUDIES IN THE BIOLOGY OF THE MEXICAN COTTON BOLL WEEVIL ON SHORT-STAPLE UPLAND, LONG-STAPLE UPLAND, AND SEA-ISLAND COTTON. Dept. Bull. 926, 44 pp., illus. 1921.
Results of studies made at Madison, Fla., 1918–19. Varieties used were King, a short-staple upland; Webber no. 49, a long-staple variety; and a sea-island cotton known as "Hope Straight."

BOLLWEEVIL CONTROL

GENERAL

HOWARD, L. O. (198)
REMEDIAL WORK AGAINST THE MEXICAN COTTON-BOLL WEEVIL. Div. Ent. Circ. (ser. 2) 33, 6 pp. 1898.

HUNTER, W. D. (199)

THE CONTROL OF THE BOLL WEEVIL. Farmers' Bull. 500, 14 pp. 1912.

Extract from Bur. Ent. Bull. 114, The Mexican Cotton Boll Weevil, by W. D. Hunter and W. D. Pierce. 1912. "Contains a brief outline of the methods which have been tested under various conditions and sums up the present available knowledge concerning the subject of control" (p. 5).

——— (200)

THE CONTROL OF THE BOLL WEEVIL, INCLUDING RESULTS OF RECENT INVESTIGATIONS. Farmers' Bull. 216, 32 pp., illus. 1905.

Supersedes Farmers' Bull. 189, Information Concerning the Mexican Cotton Boll Weevil, by W. D. Hunter. 1904. This bulletin "contains the previous recommendations of the Bureau of Entomology regarding the means of mitigating the damage by this very serious pest, with such minor modifications as have been made necessary by the work of the past season. In addition, various topics, such as the territory infested, the present status of State quarantines against the bollweevil, and other matters are considered."

——— (201)

CONTROLLING THE BOLL WEEVIL IN COTTON SEED AND AT GINNERIES. Farmers' Bull. 209, 31 pp. 1904.

——— (202)

METHODS OF CONTROLLING THE BOLL WEEVIL [ADVICE BASED ON THE WORK OF 1902]. Farmers' Bull. 163, 16 pp., illus. 1903.

"By special appropriation, which became available on the 4th of June 1902, it became possible for the Division [of Entomology] to conduct field work on a large scale and according to a system that gives tangible and presentable results. The arrangement consists of a contract whereby certain planters agree to plant, cultivate, and care for the crop exactly in accordance with the directions of the agent of the Division * * * In this way 200 acres at Calvert and 150 acres at Victoria, Tex., were used for experimental purposes. A complete field laboratory was established at the latter place for rearing work, breeding parasites, and testing poisons, as well as investigating every feature of the life history of the weevil that may afford any advantage in fighting the pest" (p. 5).

UNITED STATES DEPARTMENT OF AGRICULTURE. DIVISION OF ENTOMOLOGY. (203)

SOME MISCELLANEOUS RESULTS OF THE WORK OF THE DIVISION OF ENTOMOLOGY. III. PREPARED UNDER THE DIRECTION OF L. O. HOWARD, ENTOMOLOGIST. Div. Ent. Bull. (n.s.) 18, 101 pp., illus. 1898.

Cotton field insects, pp. 85–88. List of species caught by J. D. Mitchell, of Victoria, Tex., on October 1, 1897, when he "set out three trap lanterns in a cotton field near Victoria for one night * * *. The object of the experiment was to see whether the Mexican cotton bollweevil (*Anthonomus grandis*), which was injurious in the vicinity, could be captured in this way. The results of the catch are interesting and worthy of record, but it must be premised that not a single specimen of *Anthonomus grandis* was found in the material received" (p. 85).

CHEMICAL AND MECHANICAL CONTROL

COAD, B. R. (204)

AIRPLANE DUSTING OF COTTON FIELDS PROVES EFFECTIVE, ECONOMICAL. Yearbook 1928: 117–120, illus. 1929.

"Airplane dusting is sold by contract * * * and the farmer merely contracts for such applications as he needs on his crops." Reasonably level land and treeless areas are desirable.

——— and CASSIDY, T. P. (205)

COTTON BOLL WEEVIL CONTROL BY THE USE OF POISON. Dept. Bull. 875, 31 pp. 1920.

Results of investigations carried on since July 1918. "The present system of weevil poisoning is intended merely to keep the weevils controlled to such a degree that they will not be able to do more than offset the normal shedding of the cotton plants."

COAD, B. R., JOHNSON, E., and MCNEIL, G. L. (206)
DUSTING COTTON FROM AIRPLANES. Dept. Bull. 1204, 40 pp., illus. 1924.
Experiments were made at Tallulah, La., on control of the leafworm. "Whether this application was sufficiently thorough to control the boll-weevil is quite another question, since weevil control requires a much more thorough application than is necessary to control the leafworm, but all records bearing on this question appear to furnish decidedly favorable indications of success * * * Many districts in the South have now reached the point in public sentiment where the desirability of community weevil control can be seen, and it is only by some such method as the use of the airplane that such community poisoning can be attempted in the near future" (p. 40).

——— and CASSIDY, T. P. (207)
DUSTING FOR THE COTTON BOLL WEEVIL. Dept. Circ. 274, 3 pp. 1923.
Revision of Department Circular 162, "Some Rules for Poisoning the Cotton Boll Weevil", by B. R. Coad and T. P. Cassidy. 1922.
Instructions for use of various dusting machines.

——— (208)
KILLING BOLL WEEVILS WITH POISON DUST. Yearbook 1920: 241–252, illus. 1921.

——— and GAINES, R. C. (209)
POISONING THE COTTON BOLL WEEVIL. Leaflet 37, 4 pp. 1929.
Advantages of dusting with calcium arsenate and brief description of the method.

——— (210)
RECENT EXPERIMENTAL WORK ON POISONING COTTON-BOLL WEEVILS. Dept. Bull. 731, 15 pp., illus. 1918.
Tests made at Tallulah, La., in 1916–17 showed that dusting plants with arsenicals is effective.

HUNTER, W. D. (211)
THE USE OF PARIS GREEN IN CONTROLLING THE COTTON BOLL WEEVIL. Farmers' Bull. 211, 23 pp., illus. 1904.
"From the rather extensive observations and experiments noted the Bureau of Entomology concludes that the use of paris green in controlling the bollweevil is absolutely futile" (p. 22).

JOHNSON, ELMER, HOWARD, S. T., and COAD, B. R. (212)
COTTON-DUSTING MACHINERY. Farmers' Bull. 1319, 20 pp., illus. 1923.
Supersedes Farmers' Bulletin 1098, Dusting Machinery for Cotton Boll Weevil Control, by Elmer Johnson and B. R. Coad. 1920.

CULTURAL CONTROL

BALLARD, W. W., and SIMPSON, D. M. (213)
BEHAVIOR OF COTTON PLANTED AT DIFFERENT DATES IN WEEVIL-CONTROL EXPERIMENTS IN TEXAS AND SOUTH CAROLINA. Dept. Bull. 1320, 44 pp., illus. 1925.
Data are given for four successive plantings made in the season of 1923 at San Antonio, Tex., Charleston, S.C., and Gainesville, Fla. The results "do not show that later planting is impracticable either in Texas or South Carolina. From the nature of the problem a wide range of seasonal and soil conditions must be tested before a general advantage can be demonstrated."

BENNETT, R. L. (214)
A METHOD OF BREEDING EARLY COTTON TO ESCAPE BOLL-WEEVIL DAMAGE. Farmers' Bull. 314, 28 pp., illus. 1908.
"Seed selection for early, rapid fruiting, and for productiveness to escape weevils", pp. 17–21.

COAD, B. R., and MCGEHEE, T. F. (215)
COLLECTION OF WEEVILS AND INFESTED SQUARES AS A MEANS OF CONTROL OF THE COTTON BOLL WEEVIL IN THE MISSISSIPPI DELTA. Dept. Bull. 564, 51 pp., illus. 1917.
Report of studies conducted near Tallulah, La., during the cotton-growing seasons of 1915 and 1916, and of observations made at various points throughout Louisiana and Mississippi. It was concluded that "in a year of light infestation a slight degree of benefit may be secured from the picking operations, but that in a year of average or heavy infestation this benefit is completely lost."

COAD, B. R. (216)

COTTON BOLL-WEEVIL CONTROL IN THE MISSISSIPPI DELTA, WITH SPECIAL REFERENCE TO SQUARE PICKING AND WEEVIL PICKING. Dept. Bull. 382, 12 pp. 1916.

Preliminary report of studies described more fully in Department Bulletin 564 (see item 215).

COOK, O. F. (217)

RELATION OF DROUGHT TO WEEVIL RESISTANCE IN COTTON. Bur. Plant Indus. Bull. 220, 30 pp. 1911.

"In order to take full advantage of other measures for combating the weevils, the relation of drought to the behavior of the growing plants must be considered, no less than the direct effect of the drought upon the weevils. Questions of the value of early and late varieties and of early and late planting require to be reconsidered and given further study now that the effects of dry weather are more fully appreciated" (p. 7).

HUNTER, W. D. (218)

THE MOST IMPORTANT STEP IN THE CONTROL OF THE BOLL WEEVIL. Bur. Ent. Circ. 95, 8 pp. 1907.

Revision of Bureau of Entomology Circular (ser. 2) 56, The Most Important Step in the Cultural System of Controlling the Boll Weevil, by W. D. Hunter. 1904.

Reasons for and methods of fall destruction of plants.

——— (219)

WHAT CAN BE DONE IN DESTROYING THE COTTON BOLL WEEVIL DURING THE WINTER. Bur. Ent. Circ. 107, 4 pp. 1909.

Recommends raking and burning trash that might afford a shelter for the weevil.

NATURAL CONTROL

BAILEY, VERNON. (220)

BIRDS KNOWN TO EAT THE BOLL WEEVIL. Bur. Biol. Survey Bull. 22, 16 pp. 1905.

"Field work for the purpose of obtaining this information was begun at Seguin, Guadalupe County, in southern Texas, October 31, 1904, and was carried on at several localities in the bollweevil district until December 16."

COOK, O. F. (221)

COTTON CULTURE IN GUATEMALA. Yearbook 1904: 475–488, illus. 1905.

"The Kekchi cotton is protected by the kelep, an antlike insect which feeds upon the boll weevils. It was also learned that this and other Guatemalan varieties of cotton have special characters which assist in protecting them from the weevils. Some of these weevil-resisting adaptations may be of use in the United States, since the cotton varieties cultivated by the Guatemalan Indians belong to the Upland type so extensively planted in this country. The nature of the protective characters and the cultural methods observed in Guatemala can best be understood, however, with certain local conditions and historical facts in mind."

——— (222)

AN ENEMY OF THE COTTON BOLL WEEVIL. Dept Rpt. 78, 7 pp. 1904.

Brief preliminary report on kelep, or cotton-protecting ant, observed in Guatemala.

——— (223)

REPORT ON THE HABITS OF THE KELEP, OR GUATEMALAN COTTON-BOLL-WEEVIL ANT. Bur. Ent. Bull. 49, 15 pp. 1904.

Preliminary report on the habits of the kelep after its importation into the United States on cotton fields near Victoria, Tex.

——— (224)

THE SOCIAL ORGANIZATION AND BREEDING HABITS OF THE COTTON-PROTECTING KELEP OF GUATEMALA. Bur. Ent. Bull. 10, 55 pp. 1905.

——— (225)

WEEVIL-RESISTING ADAPTATIONS OF THE COTTON PLANT. Bur. Plant Indus. Bull. 88, 87 pp., illus. 1906.

Bionomic study of Kekchi and other Central American varieties with weevil-resistant characters. Investigations were made in Guatemala in 1904 and 1905. The importance of the weevil-eating kelep is pointed out.

HENSHAW, H. W. (226)
BIRDS USEFUL IN THE WAR AGAINST THE COTTON BOLL WEEVIL. Bur. Biol. Survey Circ. 57, 4 pp. 1907.
"The main purpose of this circular is to direct the attention of cotton growers and others in the cotton-growing States to the importance of birds in the bollweevil war, to emphasize the need of protection for them, and to suggest means to increase the numbers and extend the range of certain of the more important kinds" (p. 1).

HINDS, W. E. (227)
PROLIFERATION AS A FACTOR IN THE NATURAL CONTROL OF THE MEXICAN COTTON BOLL WEEVIL. Bur. Ent. Bull. 59, 45 pp., illus. 1906.
"The present paper does not pretend to be a study of proliferation in the botanical aspects of the question, but rather a practical statement of the large number of observations made by agents of the Bureau of Entomology primarily regarding the effect of this formation of loose tissue cells upon the bollweevil. It is consequently of an entomological and not a botanical character. The botanical significance of the phemomenon has been very fully considered by Mr. O. F. Cook, of the Bureau of Plant Industry." Bibliography of proliferation, p. 8, footnote.

——— (228)
SOME FACTORS IN THE NATURAL CONTROL OF THE MEXICAN COTTON BOLL WEEVIL. Bur. Ent. Bull. 74, 79 pp., illus. 1907.
"By 'natural control' is meant the combined effect upon the weevil of all natural enemies and of all conditions or forces in nature which retard or prevent the development of the weevils and reduce the injury which they might otherwise inflict upon the crop. These are, in general, the factors which operate to produce and to preserve what is often spoken of as 'the balance in nature.' The principal factors are temperature and moisture conditions in summer and in winter, the attack of predaceous enemies or parasites, and the dependence of the species upon a favorable condition of food supply" (p. 6).

HOWELL, A. H. (229)
BIRDS THAT EAT THE COTTON BOLL WEEVIL. A REPORT OF PROGRESS. Bur. Biol. Survey Bull. 25 pp. 1906.
Investigation made during the period from February to October 1905. "In the summary which follows, the results obtained by previous investigations are combined with those secured during the past season, thus bringing together all that is at present known concerning the relations of birds to bollweevils" (p. 10).

——— (230)
DESTRUCTION OF THE COTTON BOLL WEEVIL BY BIRDS IN WINTER. Bur. Biol. Survey Circ. 64, 5 pp., illus. 1908.

——— (231)
THE RELATION OF BIRDS TO THE COTTON BOLL WEEVIL. Bur. Biol. Survey Bull. 29, 31 pp., illus. 1907.
"As a result of investigations carried on intermittently during five seasons, 43 species of our native birds have been found to feed on the weevil. The greatest destruction of weevils in summer is wrought by swallows and orioles; in winter, by blackbirds and meadow larks." Recommends legislation needed to protect the useful birds; suggests designs for bird houses; gives status of the species of birds known to eat the bollweevil; describes field investigations in summer of 1906, and winter and spring of 1907.

NEWELL, WILMON, and BARBER, T. C. (232)
THE ARGENTINE ANT. Bur. Ent. Bull. 122, 98 pp., illus. 1913.
Bibliography, pp. 97–98.
The Argentine ant and the bollweevil, pp. 68–69. Experiments lead to the conclusion "that the Argentine ant will never be of material value as an enemy of the bollweevil. In fact, in this respect it cannot hope to approach in efficiency the common native fire ant, *Solenopsis geminata* Fab."

PIERCE, W. D., CUSHMAN, R. A., HOOD, C. E., and HUNTER, W. D. (233)
THE INSECT ENEMIES OF THE COTTON BOLL WEEVIL. Bur. Ent. Bull. 100, 99 pp., illus. 1912.
Bibliography, pp. 97–99.
"The present report is supplementary to a former bulletin which was based on investigations prior to 1907 (Pierce, 1908). The matter contained herein has mainly been gathered during the years 1907, 1908, and 1909. Only such notes as are of value for the sake of comparison have been repeated from the previous report.
"The work is divided into three parts: I. The status of the cotton bollweevil and its enemies. II. The biological complex. III. The economic application" (p. 12).

——— (234)
STUDIES OF PARASITES OF THE COTTON BOLL WEEVIL. Bur. Ent. Bull. 73, 63 pp., illus. 1908.
Bibliography, pp. 51–52.
"There are two possible practical applications of the information obtained and recorded in this bulletin, both, however, requiring expert entomological knowledge and experience. These are: (1) The propagation and collection of parasites, and their distribution in regions where the same species are either present in but small numbers or altogether absent; and (2) the elimination of related weevils by the destruction of their food plants in or about cotton fields, thereby forcing the parasites to transfer their attention to the bollweevil."

BOLLWORM AND COTTON WORM

BISHOPP, F. C. (235)
THE BOLLWORM OR CORN EAR WORM AS A COTTON PEST. Farmers' Bull. 1595, 14 pp., illus. 1929.
Supersedes Farmers' Bulletin 872, The Bollworm or Corn Earworm, by F. C. Bishopp. 1917.
"The average annual loss to cotton on account of its depredations has been estimated at $8,500,000. This injury to cotton is most severe in parts of Texas, Oklahoma, and Arkansas. There is also considerable injury in some seasons in Louisiana, Mississippi, and Alabama."
——— and JONES, C. R. (236)
THE COTTON BOLLWORM: A SUMMARY OF ITS LIFE HISTORY AND HABITS, WITH SOME RESULTS OF INVESTIGATIONS IN 1905 AND 1906. Farmers' Bull. 290, 32 pp., illus. 1907.
COMSTOCK, J. H. (237)
REPORT UPON COTTON INSECTS. PREPARED UNDER THE DIRECTION OF THE COMMISSIONER OF AGRICULTURE IN PURSUANCE OF AN ACT OF CONGRESS APPROVED JUNE 19, 1878. Div. Ent. Gen. Pub., 511 pp. 1879.
Part I, The cotton worm: Classification and nomenclature, past history, statistics of losses, cotton worm in other countries, habits and natural history, theory of migrations of the moth, influence of weather, natural enemies, remedies, bibliography; Part II, The bollworm: Importance of the subject, natural history, remedies; Part III, Nectar and its uses.
HUNTER, W. D (238)
THE COTTON WORM OR COTTON CATERPILLAR (*Alabama argillacea* HUBN.) Bur. Ent. Circ. 153, 10 pp., illus. 1912.
"Also but incorrectly called the 'army worm'."
MCCLELLAND, C. K., and SAHR, C. A. (239)
CULTURAL METHODS FOR CONTROLLING THE COTTON BOLL WORM. Hawaii Agr. Expt. Sta. Press Bull. 32, 8 pp., illus. [1912?]
Methods described for controlling the bollworm in Hawaii: annual pruning; clean culture; and trapping the mature moths.
MALLY, F. W. (240)
THE BOLL WORM OF COTTON. A REPORT OF PROGRESS IN A SUPPLEMENTARY INVESTIGATION OF THIS INSECT. Div. Ent. Bull. (old ser.) 24, 50 pp., illus. 1891.
"The bollworm was treated at some length in the fourth report of the United States Entomological Commission, and the chief object of the present investigation was to conduct further experiments with remedies, as well as to verify the value of those already employed" (p. 5).

MALLY, F. W. (241)
REPORT ON THE BOLL WORM OF COTTON (*Heliothis armiger* HUBN.) Div. Ent. Bull. (old ser.) 29, 73 pp., illus. 1893.
Habits and natural enemies, remedies, and bacteriological experiments with insect diseases.

QUAINTANCE, A. L., and BRUES, C. T. (242)
THE COTTON BOLLWORM. Bur. Ent. Bull. 50, 155 pp., illus. 1905.
Bibliography, pp. 135–149 "prepared largely by Mr. A. A. Girault." "The present work deals more especially with results of laboratory investigations and other points of interest concerning the insect as a pest to cotton and other crops throughout its extended range" (p. 4).
Results of field investigations in 1903 are given in Farmers' Bulletin 191; in 1904 in Farmers' Bulletin 212.

—— and BISHOPP, F. C. (243)
THE COTTON BOLLWORM: SOME OBSERVATIONS AND RESULTS OF FIELD EXPERIMENTS IN 1904. Farmers' Bull. 212, 32 pp., illus. 1905.
Supersedes Farmers' Bulletin 191, The Cotton Bollworm: an Account of the Insect, with Results of Experiments in 1903, by A. L. Quaintance. 1904.

UNITED STATES DEPARTMENT OF AGRICULTURE. DIVISION OF ENTOMOLOGY (244)
REPORTS OF EXPERIMENTS, CHIEFLY WITH KEROSENE, UPON THE INSECTS INJURIOUSLY AFFECTING THE ORANGE TREE AND THE COTTON PLANT, MADE UNDER THE DIRECTION OF THE ENTOMOLOGIST. Div. Ent. Bull. (old ser.) 1, 62 pp. 1883.
Observations and Experiments Upon the Cotton Worm (pp. 38–45); Report of Observations and Experiments on the Cotton Worm (*Aletia xylina*) by R. W. Jones (pp. 47–51); Reporte Upon the Cotton Worm, Bollworm, and Other Insects, by Lawrence Johnson (pp. 53–58).

—— DIVISION OF ENTOMOLOGY. (245)
REPORTS OF OBSERVATIONS AND EXPERIMENTS IN THE PRACTICAL WORK OF THE DIVISION, MADE UNDER THE DIRECTION OF THE ENTOMOLOGIST. Div. Ent. Bull. (old ser.) 26, 95 pp., illus. 1892.
Report of Progress in the Investigation of the Cotton Bollworm, by F. W. Mally, pp. 45–56.

—— DIVISION OF ENTOMOLOGY. (246)
REPORTS OF OBSERVATIONS AND EXPERIMENTS IN THE PRACTICAL WORK OF THE DIVISION, MADE UNDER THE DIRECTION OF THE ENTOMOLOGIST. Div. Ent. Bull. (old ser.) 3, 75 pp., illus. 1883.
Report Upon the Cotton Worm in South Texas in the Spring and Early Summer of 1883, by E. H. Anderson (pp. 31–38); Experimental Tests of Machinery Designed for the Destruction of the Cotton Worm, by W. S. Barnard (pp. 39–48).

PINK BOLLWORM

BUSCK, AUGUST. (247)
THE PINK BOLLWORM, *Pectinophora gossypiella.* Jour. Agr. Research 9: 343–370, illus. 1917.
Literature cited, pp. 366–370.
A detailed description, "based on an investigation * * * conducted in the Hawaiian Islands during the summer of 1915 and subsequent anatomical studies made from material from various sources." Contains also a "similar detailed descriptive and anatomical study of another lepidopterous insect, *Pyroderces rileyi* Walsingham, which may be called the 'scavenger bollworm' because it frequently occurs in decayed or dried bolls injured by other insects." It has occasionally been mistaken for the pink bollworm.

FENTON, F. A., and WAITE, W. W. (248)
DETECTING PINK BOLLWORMS IN COTTONSEEDS BY THE X-RAY. Jour. Agr. Research 45: 347–348, illus. 1932.

HEINRICH, CARL. (249)
SOME LEPIDOPTERA LIKELY TO BE CONFUSED WITH THE PINK BOLLWORM. Jour. Agr. Research 20: 807–836, illus. 1921.
This study was conceived and arranged by W. D. Hunter, in charge of the pink-bollworm eradication, to aid the work of his inspectors. "The purpose of the present paper is to define the characters which will distinguish the larva and pupa of the pink bollworm, *Pectinophora gossypiella* Saunders, from those of other Lepidoptera attacking cotton or related malvaceous plants and of still others feeding on plants other than malvaceous but frequently found in the neighborhood of cotton fields." The field work upon which this paper is based was conducted throughout the pink-bollworm area in southeastern Texas and in Cameron County, in the southern extremity of Texas.

HUNTER, W. D. (250)
THE FIGHT AGAINST THE PINK BOLLWORM IN THE UNITED STATES. Yearbook 1919: 355–368, illus. 1920.
Texas pink-bollworm law discussed, pp. 360–362.

—— (251)
THE PINK BOLLWORM. Bur. Ent. [Unnumb. Pub.], 6 pp., illus. 1914.

—— (252)
THE PINK BOLLWORM, WITH SPECIAL REFERENCE TO STEPS TAKEN BY THE DEPARTMENT OF AGRICULTURE TO PREVENT ITS ESTABLISHMENT IN THE UNITED STATES. Dept. Bull. 1397, 31 pp., illus. 1926.
Literature cited, pp. 29–30.
Supersedes Department Bulletin 723, issued under the same title in 1918.

LOFTIN, U. C., MCKINNEY, K. B., and HANSON, W. K. (253)
REPORT ON INVESTIGATIONS OF THE PINK BOLLWORM OF COTTON IN MEXICO. Dept. Bull. 918, 64 pp., illus. 1921.
Appendix, pp. 58–64: Generic and specific description, reprinted from The Pink Bollworm, *Pectinophora gossypiella* by August Busck, Jour. Agr. Research 9: 343–370. 1917.

OHLENDORF, W. (254)
STUDIES OF THE PINK BOLLWORM IN MEXICO. Dept. Bull. 1374, 64 pp., illus. 1926.
Report based on 2 years' study of the pink bollworm in the Laguna district of Mexico, with especial attention to control measures.
Discusses in detail the distribution of the pink bollworm, its habits, damage caused, food plants, dissemination by flight, natural control, and repression by cultural methods; heat treatment of seeds, and poisoning.

SASSCER, E. R. (255)
PINK BOLLWORM AND MEASURES TO EXCLUDE IT. Yearbook 1926: 582–584, illus. 1927.
Fumigation measures are described.

SCHUTZ, H. H., and HASKELL, E. S. (256)
A SURVEY OF THE PINK BOLLWORM SITUATION IN THE LAGUANA DISTRICT, MEXICO. 87 pp. Bur. Markets and Crop Estimates. [1922.] [Mimeographed.]

UNITED STATES DEPARTMENT OF AGRICULTURE. FEDERAL HORTICULTURAL BOARD. (257)
FINDINGS OF PINK BOLLWORM CONFERENCE, DALLAS, TEX., DECEMBER 2, 1921. REPORT OF COMMITTEE AT LARGE. 2 pp. [1921.] [Mimeographed.]

——— FEDERAL HORTICULTURAL BOARD. (258)
PINK BOLLWORM SITUATION SUMMARIZED. 6 pp. [1921.] [Mimeographed.]
Issued in connection with the pink-bollworm conference called by the Department of Agriculture for May 16, 1921.

——— FEDERAL HORTICULTURAL BOARD. (259)
REPORT OF PINK BOLLWORM CONFERENCE. 4 pp. [1921.] [Mimeographed.]
Report of conference held at Washington, D.C., May 16, 1921, and attended by representatives from Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, Texas, Arkansas, Oklahoma, New Mexico, Arizona, and California. List of delegates, p. 4.

UNITED STATES DEPARTMENT OF AGRICULTURE. FEDERAL HORTICULTURAL BOARD. (260)

SUMMARY OF THE PINK BOLLWORM SITUATION. NOVEMBER 26, 1921. 6 pp. 1921. [Mimeographed.]

Prepared for the information of the persons attending the conference called by the Department of Agriculture for December 2 [1921.] at Dallas, Tex.

WILLARD, H. F. (261)

PARASITES OF THE PINK BOLLWORM IN HAWAII. Tech. Bull. 19, 16 pp., illus. 1927.

Literature cited, pp. 14-15.

The pink bollworm is attacked in Hawaii by seven parasites. Notes are given for two of these, *Microbracon mellitor* Say and *Perisierola emigrata*.

OTHER INSECTS AND PESTS

BARBER, E. R. (262)

THE ARGENTINE ANT: DISTRIBUTION AND CONTROL IN THE UNITED STATES. Dept. Bull. 377, 23 pp., illus. 1916.

"In corn, cotton, and sugarcane fields the Argentine ant, when present, is constantly attending the aphids and mealy bugs, increasing the numbers of these species to an alarming degree, much to the detriment of the plants" (p. 6).

BARBER, T. C. (263)

PRELIMINARY OBSERVATIONS ON AN INSECT OF THE COTTON STAINER GROUP NEW TO THE UNITED STATES. Jour. Agr. Research 31: 1137–1147, illus. 1925.

Preliminary information concerning the life history and habits of *Dysdercus obscuratus* Distant, which was found in cotton fields in the lower Rio Grande Valley of Texas and in Tamaulipas, Mexico.

BECKER, G. G. (264)

COTTON PEST RELATED TO BOLL WEEVIL NOW QUARANTINED IN WEST. Yearbook 1927: 226–228, illus. 1928.

"Quarantine No. 61 against the Thurberia weevil became effective July 15, 1926. The territory immediately affected by the quarantine was practically confined to cotton cultures in the Santa Cruz Valley of Arizona extending from Nogales north to and including the so-called 'Postvale area,'" map, (fig. 60, p. 228).

BROOKS, F. E., and COTTON, R. T. (265)

THE CAMBIUM CURCULIO, *Conotrachelus anaglypticus* SAY. Jour. Agr. Research 28: 377–386, illus 1924.

Literature cited, p. 386.

There is "a possibility that sound cotton bolls are attacked and injured by the larvae" (p. 379).

COAD, B. R., FOLSOM, J. W., and GAINES, R. C. (266)

COTTON-LOUSE CONTROL. Leaflet 53, 4 pp., illus. 1929.

Method of dusting the louse or aphid with nicotine dust.

——— (267)

RELATION OF THE ARIZONA WILD COTTON WEEVIL TO COTTON PLANTING IN THE ARID WEST. Dept. Bull. 233, 12 pp., illus. [1915].

Habits of the wild cotton or Thurberia weevil and possibility of its transference to cultivated cotton.

——— (268)

STUDIES ON THE BIOLOGY OF THE ARIZONA WILD COTTON WEEVIL. Dept. Bull. 344, 23 pp., illus. 1916.

COBB, N. A. (269)

A NEW PARASITIC NEMA FOUND INFESTING COTTON AND POTATOES. Jour. Agr. Research 11: 27–33, illus. 1917.

FOLSOM, J. W., and BONDY, F. F. (270)

CALCIUM ARSENATE DUSTING AS A CAUSE OF APHID INFESTATION. Circ. 116, 12 pp., illus. 1930.

Results of investigations conducted at the Delta Laboratory of the Bureau of Entomology at Tallulah, La., 1922–30, showed that "excessive applications of calcium arsenate are often followed by heavy infestations of the cotton louse * * * In experiments it was found that a heavy aphid infestation is built up by the killing of hymenopterous parasites when they emerge in the presence of the arsenical * * * Initial infestations were found to be due to the positive phototropic reaction of winged females to the white deposit of calcium arsenate" (p. 11).

FORD, E. (271)
COTTON-CATERPILLAR RUST AND ROT. U.S. Commr. Patents Rpt. 1852 (Agr.): 47–48. 1853.

GIBSON, E. H. (272)
THE CORN AND COTTON WIREWORM IN ITS RELATION TO CEREAL AND FORAGE CROPS, WITH CONTROL MEASURES. Farmers' Bull. 733, 8 pp., illus. 1916.
"Cotton is injured in the early stages by larvae boring into the seed and injuring the very young plants, checking the growth so much that the plant dies or struggles along only to produce little or no cotton." Life history, pp. 4–5.

GLOVER, TOWNEND. (273)
INVESTIGATIONS ON THE INSECTS AND DISEASES AFFECTING THE COTTON PLANT. U.S. Commr. Patents Rpt. 1857 (Agr.): 121–129, illus. 1858.
Rust and blight are described and the cotton louse is mentioned.

HUNTER, W. D. (274)
COTTON HOPPER, OR SO-CALLED "COTTON FLEA." Dept. Circ. 361, 15 pp., illus. 1926.

——— (275)
THE COTTON STAINER. Bur. Ent. Circ. 149, 5 pp., illus. 1912.

——— (276)
TWO DESTRUCTIVE TEXAS ANTS. Bur. Ent. Circ. 148, 7 pp. 1912.
The cutting or parasol ant and the agricultural or hillock ant, which attack cotton and other plants, are described.

JACKSON, C. T. (277)
RESEARCHES ON THE COTTON-STAINER, OR RED BUG. U.S. Commr. Patents Rpt. 1858 (Agr.): 272–273. 1859.
Researches resulted in the discovery of "the art of making a yellow dye of a permanent character, from the red bug * * * Its value, however, is likely to be chiefly local, as the quantity of these insects the planters can collect would not be adequate to the demand."

KING, W. V., and COOK, W. S. (278)
FEEDING PUNCTURES OF MIRIDS AND OTHER PLANT-SUCKING INSECTS AND THEIR EFFECT ON COTTONS. Tech. Bull. 296, 12 pp., illus. 1932.
Experiments begun in 1927 and carried on for 3 years at Tallulah, La., "indicate that hopper damage is due to injected substances normally present in the insects and toxic to the plant, rather than to a transmissible disease" (p. 11).

MCGREGOR, E. A. (279)
Lygus elisus: A PEST OF THE COTTON REGIONS IN ARIZONA AND CALIFORNIA. Tech. Bull. 4, 15 pp., illus. 1927.
Lygus elisus, also known as the "tarnished bug" and the "cotton dauber", causes injury to cotton plants by puncturing the squares, blooms, and young bolls by mouth parts.

——— (280)
THE RED SPIDER ON COTTON. Bur. Ent. Circ. 172, 22 pp., illus. 1913.
Supersedes Bureau Entomology Circular 150, issued under the same name in 1912.

——— and MCDONOUGH, F. L. (280a)
THE RED SPIDER ON COTTON. Dept. Bull. 416, 72 pp., illus. 1917.
Bibliography, pp. 69–72.
Includes detailed report on classification and synonymy; food plants; life-history; description and habits; damage; insect enemies; remedial measures; and other subjects relating to this pest.

——— (281)
THE RED SPIDER ON COTTON AND HOW TO CONTROL IT. Farmers' Bull. 831 (rev. ed.), 15 pp., illus. 1931.
Supersedes Farmers' Bull. 735, issued under the same title in 1916.
"For many years this trouble has been called 'rust' by cotton planters, who concluded from the reddening of the leaves that it was a disease. The injury, however, is caused by the presence on the cotton leaves of multitudes of small mites called 'red spiders.'" (p. 3).

——— (282)
THE TRUE CRICKET—A SERIOUS COTTON PEST IN CALIFORNIA. Circ. 75, 8 pp. 1929.

PAINTER, R. H. (283)
A STUDY OF THE COTTON FLEA HOPPER, *Psallus seriatus* REUT., WITH ESPECIAL REFERENCE TO ITS EFFECT ON COTTON PLANT TISSUES. Jour. Agr. Research 40: 485–516, illus. 1930.
Literature cited, p. 516.

SNYDER, T. E. (284)
"WHITE ANTS" AS PESTS IN THE UNITED STATES AND METHODS OF PREVENTING THEIR DAMAGE. Farmers' Bull. 759, 20 pp., illus. 1916.
It is noted that white ants occasionally injure the stems and roots of cotton plants.

TITUS, E. S. G. (285)
THE COTTON RED SPIDER. Bur. Ent. Circ. 65, 5 pp., illus. 1905

UNITED STATES DEPARTMENT OF AGRICULTURE. BUREAU OF ENTOMOLOGY. (286)
SOME MISCELLANEOUS RESULTS OF THE WORK OF THE BUREAU OF ENTOMOLOGY. VIII. Bur. Ent. Bull. 54, 99 pp., illus. 1905.
Report on a Mexican cotton pest, the "conchuela" (*Pentatoma ligata* Say.), by A. W. Morrill, pp. 18–34.

——— (287)
SOME MISCELLANEOUS RESULTS OF THE WORK OF THE BUREAU OF ENTOMOLOGY—IX. Bur. Ent. Bull. 64, 98 pp., illus. 1911.
Issued in separate form on April 2, 1907.
I. The Mexican Conchuela in Western Texas in 1905. (*Pentatoma ligata* Say.), by A. W. Morrill, pp. 1–14.

AGRONOMY

BLAIR, R. E. (288)
THE WORK OF THE YUMA RECLAMATION PROJECT EXPERIMENT FARM IN 1918. Dept. Circ. 75, 77 pp., illus. 1920.
Cotton, pp. 14–16. "Nearly 64 percent of the entire irrigated area of the project, or 28,608 acres, was planted to cotton." Yields and farm values are given. Cotton experiments, pp. 26–63. Variety tests and ratooning, thinning tests, time-of-planting experiment with Pima cotton, the furrow-and-bed method, breeding work.

CAMP, W. B. (289)
COTTON CULTURE IN THE SAN JOAQUIN VALLEY IN CALIFORNIA. Dept. Circ. 164, 22 pp., illus. 1921.
"This circular is devoted principally to the growing of Pima Egyptian long-staple cotton in the San Joaquin valley, although the same methods are applicable to such long-staple upland varieties as the Durango and Acala, which are preferable for short-season districts." (p. 4.)

——— (290)
PRODUCTION OF ACALA COTTON IN THE SAN JOAQUIN VALLEY OF CALIFORNIA. Dept. Circ. 357, 24 pp., illus. 1925.
"Circular No. 164 [see item 289] * * * treated of the culture of Pima Egyptian cotton in the San Joaquin Valley, but since then the Acala variety of Upland cotton has been substituted and is now being grown to the exclusion of all others * * * Cultural methods which have proved well adapted to conditions there, including preparation of land, planting, thinning, irrigation, cultivating, etc., are described in this bulletin."

CAPRON, HORACE. (291)
AGRICULTURE IN JAPAN. Dept. Agr. Rpt. 1873: 364–374. 1874.
Cotton, pp. 370–371.
Requirements of cultivation are given. It is stated that cotton cultivation is "second alone in importance to rice."

CARDON, P. V. (292)
EXPERIMENTS WITH SINGLE-STALK COTTON CULTURE IN LOUISIANA, ARKANSAS, AND NORTH CAROLINA. Dept. Bull. 526, 31 pp., illus. 1918.
Results of a series of experiments made in 1915. "There was no significant difference in the lint produced by the different systems of culture, the lint percentage, the size of the seed, the lint index (grams of lint of 100 seeds), and the grade and length of lint remaining about the same."

CARDON, P. V. (293)
NURSE PLANTING SELECT COTTON SEED. Dept. Bull. 668, 12 pp., illus. 1918.
The experiments reported were conducted in 1917 at the United States Experiment Farm at San Antonio, Tex. The method suggested uses substitute seeds of a different type of cotton, or of beans or peas, in place of those select cotton seed that would produce surplus plants to be removed in thinning. Beans or peas are as effective as select cotton plants in breaking through the soil crust.

CHAMBERS, C. L. (294)
HAIRY VETCH TURNED UNDER GREATLY INCREASES SOUTH'S COTTON AND CORN YIELDS. Yearbook 1930: 302–305, illus. 1930.

CHILCOTT, E. C., and COLE, J. S. (295)
SUBSOILING, DEEP TILLING, AND SOIL DYNAMITING IN THE GREAT PLAINS. Jour. Agr. Research 14: 481–521, illus. 1918.
Literature cited, p. 521.
"Results of subsoiling at 12 stations [of the Office of Dry-Land Agriculture Investigations, United States Department of Agriculture] in the Great Plains area for a total of 66 station-years, or an average of 5½ years at each station. From four to seven crops have been grown each year at each station." Cotton was one of the crops under trial. Results of other investigations of subsoiling and deep tilling, pp. 517–519.

CLOUD, N. B. (296)
COTTON CULTURE IN 1866. Dept. Agr. Rpt. 1866: 190–193. 1867.
Describes an improved system of culture, based upon the use of labor-saving machinery and proper fertilization.

COOK, O. F., and DOYLE, C. B. (297)
ACALA COTTON, A SUPERIOR UPLAND VARIETY FROM SOUTHERN MEXICO. Circ. 2, 30 pp., illus. 1927.
History of Acala cotton, cultural and marketing advantages, and production in 1-variety communities. Acala cotton "now forms the bulk of the crop in the irrigated districts of western Texas, New Mexico, Arizona, and California."

——— (298)
COTTON IMPROVEMENT UNDER WEEVIL CONDITIONS. Farmers' Bull. 501 (rev. ed.), 22 pp. 1922.
Issued 1912; revised 1920; reprinted 1922.
Early varieties and cultural methods that favor a rapid development of the crop are recommended.

——— (299)
COTTON MORE PRODUCTIVE WHEN THICK SPACED FOR SMALL UPRIGHT PLANTS. Yearbook 1931: 167–171, illus. 1931.

——— (300)
COTTON VARIETIES IN CALIFORNIA. 3 pp. 1929. Bur. Plant Indus. [Mimeographed.]
Report on variety tests conducted in the season of 1928.

——— and MARTIN, R. D. (301)
CULTURE OF PIMA AND UPLAND COTTON IN ARIZONA. Farmers' Bull. 1432, 14 pp., illus. 1924.
Revision of Farmers' Bull. 577, Growing Egyptian Cotton in the Salt River Valley, Arizona, by E. W. Hudson. 1914.

——— (302)
DURANGO COTTON IN THE IMPERIAL VALLEY. Bur. Plant Indus. Circ. 111: 11–22, illus. 1913.
History of Durango cotton, the acclimatization of which was begun in 1905; its cultural characters, and comparison with the Columbia, Foster, Allen, and Egyptian varieties. The author concludes that "the introduction of the Durango cotton meets the demand for a long-staple variety adapted to the local conditions and promises the largest profits for the farmers of the valley".

——— (303)
HINDI COTTON IN EGYPT. Bur. Plant Indus. Bull. 210, 58 pp., illus. 1911.
Conclusions drawn from a visit to the cotton-growing districts of Egypt in June and July 1910. "Hindi is the name applied in Egypt to an undesirable type of cotton with a short, weak fiber, that injures the high-grade Egyptian varieties by infesting them with hybrids. * * * The establishment of a profitable culture of Egyptian cotton in Arizona and southern California depends largely on the exclusion of the Hindi contamination."

COOK, O. F. (304)

IMPROVEMENTS IN COTTON PRODUCTION. Dept. Circ. 200, 12 pp. 1921.

——— (305)

LOCAL ADJUSTMENT OF COTTON VARIETIES. Bur. Plant Indus. Bull. 159, 75 pp. 1909.

A comparison made between two fields of Triumph cotton—one at Lockhart, Tex., the other at Kerrville, Tex., in the season of 1907.

The process of selection to restore the uniformity of a variety in a new place is called local adjustment.

"Selection for local adjustment is distinct in objects and methods from breeding for improvement or for originating new varieties. The object of local adjustment is to preserve varieties already existing and guard them against recurrence of diversity."

——— (306)

A NEW SYSTEM OF COTTON CULTURE AND ITS APPLICATION. Farmers' Bull. 601, 12 pp., illus. 1914.

The descriptive portion of this bulletin (pp. 1–5) is to a large extent repr.nted from a paper in Bureau of Plant Industry Circular 115, A New System of Cotton Culture, by O. F. Cook, issued in 1913, which is now out of print.

The new system is based on control of vegetative branches by improved methods of thinning, which permit an earlier development of the fruiting branches.

——— (307)

ORIGIN OF THE HINDI COTTON. Bur. Plant. Indus. Circ. 42, 12 pp. illus. 1909

"Experiments with Egytian cotton in Arizona show that the so-called 'Hindi' variations which appear among plants grown from seed imported from Egypt are one of the principal factors of the diversity that would diminish the commercial value of the fiber .

"Comparisons with other types indicate that the Hindi cotton is of American origin instead of a result of hybridization with a native Egyptian or other Old World species of cotton as various writers have assumed."

——— (308)

RESULTS OF COTTON EXPERIMENTS IN 1911. Bur. Plant Indus. Circ. 96, 21 pp. 1912.

"Brief summary of the principal conclusions that have been reached [by research in the Bureau of Plant Industry], especially those that affect general problems of breeding and crop production.

"The present statement is to be considered as supplementary to that contained in the Annual Report of the Chief of the Bureau of Plant Industry for 1911."

Juvenile leaf curl of cotton, pp. 13–15. Experiments on Egyptian cotton, pp. 16–20.

——— (309)

SINGLE-STALK COTTON CULTURE. Bur. Plant Indus. [Doc.] 1130, 11 pp., illus. 1914.

"The cultural ideal under the new system is a cotton plant with only the single erect central stalk, bearing numerous well-developed fruiting branches, but none of the vegetative branches, or secondary stalks."

COTTON CONVENTION, ATLANTA, GA. (310)

ADDRESS OF HON. GEO. B. LORING, COMMISSIONER OF AGRICULTURE, AND OTHER PROCEEDINGS OF THE COTTON CONVENTION HELD IN ATLANTA, GA., NOVEMBER 2, 1881. Dept. Rpt. 17, 35 pp. 1881.

Commissioner Loring's address (pp. 4–16). A discussion of "1. The increase of the crop of cotton to the acre; and, 2, the introduction of diversified farming as a source of profit to the farmer and of benefit to the soil he cultivates."—Address by Edward Atkinson, containing a plea for uniformity of staple (pp. 16–18).—Address by Professor Riley, describing machines for poisoning the boll worm (pp. 19–29).

CROSBY, M. A. (311)
FARM PRACTICES THAT INCREASE CROP YIELDS IN THE GULF COAST REGION. Farmers' Bull. 986, 28 pp., illus. 1918.
Crop rotations, pp. 21–28. Rotation for control of root knot, pp. 24–25.

DEWEY, L. H. (312)
EGYPTIAN COTTON IN THE UNITED STATES. Div. Bot. Circ. 26, 9 pp., illus. 1900.
Importations; experiments with imported seed; description of varieties; cotton cultivation in Egypt; soil, temperature, humidity, and rainfall conditions in the United States compared with those in Egypt.

DOYLE, C. B. (313)
LIVE-AT-HOME PLANS AND SOIL BUILDING AID COTTON GROWERS. Yearbook 1933: 114–118. 1933.
"As a result of an intensive study made several years ago, the following general recommendations for improvements in farm practices with cotton are being emphasized by the United States Department of Agriculture and the Association of Southern Agricultural Workers."

——— (314)
MULTIPLICITY OF VARIETIES HANDICAPS IMPROVEMENT IN THE AMERICAN COTTON CROP. Yearbook 1933: 107–114, illus. 1933.
Includes a discussion of the characters of a superior variety, cluster varieties, and novelty varieties.

FOADEN, G. P. (315)
COTTON CULTURE IN EGYPT. Off. Expt. Sta. Bull. 42, 34 pp., illus. 1897.
Includes Exports of Cotton from Egypt, by F. H. Hitchcock, pp. 29–34.

——— (316)
NOTES ON EGYPTIAN AGRICULTURE. Bur. Plant Indus. Bul. 62, 62 pp., illus. 1904.
Cotton, pp. 16–42. Methods of cultivation are discussed and some information on marketing is included. Notes are given on the Ashmouni, Mit Affi, Abbasi, and Jannovitch varieties.
The author, at the time of writing this bulletin, was secretary of the Khedivial Agricultural Society, Cairo.

GALLOWAY, B. T. (317)
INDUSTRIAL PROGRESS IN PLANT WORK. Yearbook 1902: 219–230. 1903.
Progress in cotton improvement, pp. 228–230. Discusses investigations which have been made of diseases; development of new types of cotton for special regions and special purposes; and introduction of Egyptian cotton.

HALE, G. A. (318)
THE EFFECT OF LATITUDE, LENGTH OF GROWING SEASON, AND PLACE OF ORIGIN OF SEED ON THE YIELD OF COTTON VARIETIES. Jour. Agr. Research 46: 731–737, illus. 1933.

HARRIS, J. A., and NESS, M. M. (319)
APPLICABILITY OF PEARSON'S EQUIVALENT PROBABILITY *r* METHOD TO THE PROBLEM OF SEEDLING MORTALITY IN SEA-ISLAND, EGYPTIAN, AND UPLAND COTTON. Jour. Agr. Research 36: 615–623. 1928.
Literature cited, p. 623.

——— (320)
THE CORRELATION BETWEEN THE SOIL SALINITY AND FLOWERING DATE IN COTTON. Jour. Agr. Research 38: 109–112. 1929.
Literature cited, p. 112.
"Consideration of the correlations between soil resistance and flowering date in an extensive culture of Pima Egyptian, Meade upland, and Acala upland cottons, made at the United States Field Station in the Gila River Valley at Sacaton, Ariz., indicates that there is a low negative correlation between the soil resistance and the time required for flowering in these three varieties of cotton. Since soil salinity is measured in terms of resistance, while flowering date is measured in terms of days after an arbitrary origin date (June 1), negative correlation coefficients indicate that the flowering date is slightly retarded by soil salinity."

HARRIS, J. A., HARRISON, G. J., and LOCKWOOD, E. K. (321)
A CRITERION OF THE DIFFERENTIATION OF VARIETIES OR OF EXPERIMENTAL AREAS WITH RESPECT TO THEIR CAPACITY TO PRODUCE SEEDLING STANDS OF COTTON. Jour. Agr. Research 38: 601–621, illus. 1929.
Literature cited, pp. 619–621.
"The primary purpose of this paper is to give and to illustrate the applicability of criteria for the determination of differences in the seedling stands produced by different varieties of cotton when grown under the same conditions and by the same variety of cotton when grown under different field conditions.
"Pearson's double x^2 criterion, which compares all the classes involved in the two frequency distributions, is shown to be a suitable test of differentiation in such cases.
"Incidentally, comparisons between the seedling stands produced by a number of varieties, as grown under irrigation in southern Arizona, are made. Pima Egyptian cotton showed a marked superiority over the upland varieties with which it was compared in its ability to establish seedling stands under the rather saline soil conditions of the Gila River Valley of southern Arizona. Sea-island cotton seemed to show a behavior similar to Pima Egyptian in this respect."

——— and GUNSTAD, B. (322)
EXTENSION OF PEARSON'S CORRELATION METHOD TO INTRACLASS AND INTERCLASS RELATIONS. Jour. Agr. Research 42: 279–291. 1931.
Literature cited, pp. 290–291.
"While illustrations of the application of the method to the problem of the influence of field heterogeneity, in the sense in which this term has been used in earlier papers * * * on seedling stand in sea-island and Durango cotton have been given, the primary purpose of the present investigation has been to derive the necessary biometric formulas."

———, HARRISON, G. J., and WADLEY, F. M. (323)
ILLUSTRATIONS OF THE APPLICATION OF A CRITERION OF THE DEVIATION OF AN OBSERVED FROM A RANDOM DISTRIBUTION TO THE PROBLEM OF SEEDLING STAND IN SEA-ISLAND, EGYPTIAN, AND UPLAND COTTON. Jour. Agr. Research 36: 603–614, illus. 1928.
"In this paper attention is limited to a comparison of the actual frequency distribution of the number of seedlings per hill with the theoretical distribution which should arise if frequencies were determined solely by chance."

——— (324)
A POSSIBLE RELATIONSHIP BETWEEN SOIL SALINITY AND STAND IN COTTON. Jour. Agr. Research 37: 213–231, illus. 1928.
Literature cited, pp. 230–231.
"The present investigation has dealt with the problem of the relationship between the concentration of the soil solution and the seedling stand produced in cultures of Pima Egyptian and of Meade, Acala, and Lone Star upland cotton in heterogeneous experimental fields."

HASTINGS, S.H., and LETTEER, C. R. (325)
EXPERIMENTS IN SUBSOILING AT SAN ANTONIO [TEXAS]. Bur. Plant Indus. Circ. 114: 9–14, illus. 1913.
"Subsoiling consists in loosening the soil to a depth greater than it can be loosened with an ordinary plow. This is accomplished by a subsoil plow, which operates in the bottom of the furrow left by a breaking plow, loosening the soil to the additional depth of about 12 inches." Corn, cotton (Triumph variety), oats, grain sorghums, and sorgos were grown in the experiments.

——— (326)
THE WORK OF THE SAN ANTONIO EXPERIMENT FARM IN 1915. Bur. Plant. Indus., West. Irrig. Agr. [Circ.] 10, 17 pp., illus. 1916.
"The work of the San Antonio Experiment Farm was continued in 1915 along the same general lines as those indicated in previous reports." Experiments with cotton, pp. 13–14. "Some varietal tests were continued, further studies were made with regard to the acclimatization of certain introduced varieties, and considerable breeding work was done."

HORNER, W. H. (327)
COTTON IN MISSOURI. U.S. Commr. Patents Rpt. 1861 (Agr.): 221–223. 1862.
Notes on cultivation.

HUBBARD, J. W. (328)
OUTLINES OF COTTON CULTURE IN THE SAN JOAQUIN VALLEY OF CALIFORNIA. Circ. 256, 8 pp., illus. 1933.

HUDSON, E. W. (329)
PREPARATION OF LAND FOR EGYPTIAN COTTON IN THE SALT RIVER VALLEY, ARIZONA. Bur. Plant Indus. Circ. 110, 17–20. 1913.
"To secure the best crop of Egyptian cotton, it is of very great importance that the grower select uniform land with very slight grade on which alfalfa has grown for at least 3 years."

JACKSON, C. T. (330)
CHEMICAL ANALYSES OF COTTON SOILS—ANALYSES OF THE ASH OF THE COTTON PLANT. U.S. Commr. Patents Rpt. 1857 (Agr.): 296–304, illus. 1858.

JANSSEN, GEORGE, and BARTHOLOMEW, R. P. (331)
THE INFLUENCE OF THE POTASH CONCENTRATION IN THE CULTURE MEDIUM ON THE PRODUCTION OF CARBOHYDRATES IN PLANTS. Jour. Agr. Research 40: 243–261, illus. 1930.
Literature cited, pp. 259–261.
Cotton grown in water culture, table 3, C, (p. 247).

KEARNEY, T. H. (332)
COTTON CULTURE IN THE SOUTHWESTERN UNITED STATES. Bur. Plant Indus. Doc. 362, 3 pp. 1908.

——— and MEANS, T. H. (333)
CROPS USED IN THE RECLAMATION OF ALKALI LANDS IN EGYPT. Yearbook 1902: 573–588, illus. 1903.
The observations upon which this paper is based were made in the course of a visit to northern Africa under the auspices of the Office of Seed and Plant Introduction and Distribution, Bureau of Plant Industry. The primary object of this expedition * * * was to secure seeds of plants suitable for introduction into the arid parts of the United States. Crops used in the process of reclamation: Cotton, pp. 586–587.

——— (334)
EGYPTIAN COTTON AS AFFECTED BY SOIL VARIATIONS. Bur. Plant Indus. Circ. 112: 17–24, illus. 1913.
"It is evident that in order to obtain the largest yields and what is of the utmost importance, the greatest possible uniformity in the staple, strength, and other qualities of the fiber, Egyptian cotton must be grown in soils that do not vary greatly in texture and salt content."

——— and PETERSON, W. A. (335)
EGYPTIAN COTTON IN THE SOUTHWESTERN UNITED STATES. Bur. Plant Indus. Bull. 128, 71 pp., illus. 1908.
Experiments made during 1902–7 in the Southwest, especially at Yuma, Ariz., show that the region is well adapted to Egyptian varieties of cotton. Suggestions as to cultural methods are given. Cotton culture in Egypt, pp. 10–26. Mean monthly and annual temperatures in degrees Fahrenheit, at localities in Egypt and in the southwestern part of the United States, table 1 (p. 12).

——— and PETERSON, W. A. (336)
EXPERIMENTS WITH EGYPTIAN COTTON IN 1908. Bur. Plant Indus. Circ. 29, 22 pp., 1909
Progress of the work since the publication of Bureau of Plant Industry Bulletin 128. (See item 335.) Includes a statement "regarding the volume and value of the imports of Egyptian cotton into the United States in 1908 and * * * a report on the spinning test made by manufacturers with the fiber produced at Yuma in 1907."

——— (337)
TESTS OF THE PIMA EGYPTIAN COTTON IN THE SALT RIVER VALLEY, ARIZONA. Bur. Plant Indus., Alkali and Drought Resistant Plant Invest. Circ. 1, 4 pp. 1916.
Comparison of plant characters of Pima and Yuma cottons show superiority of the Pima variety in boll productiveness, earliness, size of bolls, greater freedom of limbs, longer and finer fiber. Mention is made of field tests conducted in cooperation with the Salt River Valley Egyptian Cotton Growers' Association.

KEATING, F. E. (338)

AGRONOMIC WORK OF THE BIG SPRING, TEX., FIELD STATION—1915–1929. Circ. 202, 32 pp., illus. 1932.

Experiments with cotton included rotation and tillage investigations; variety tests, date-of-seeding tests, and rate-of-seeding tests.

KING, C. J., and LOOMIS, H. F. (339)

AGRICULTURAL INVESTIGATIONS AT THE UNITED STATES FIELD STATION, SACATON, ARIZ., 1925–1930. Circ. 206, 64 pp., illus. 1932.

Studies on cotton included attention to diseases; variety tests; irrigation experiments; physiological investigations; experiments in genetics.

Genetics: Cotton of the Egyptian type, by T. H. Kearney, pp. 41–45.

——— and LEDING, A. R. (340)

AGRICULTURAL INVESTIGATIONS AT THE UNITED STATES FIELD STATION, SACATON, ARIZ., 1922, 1923, AND 1924. Dept. Circ. 372, 46 pp., illus. 1926.

Cotton experiments, pp. 11–24. Variety tests; spacing rotation, time-of-planting, and irrigation experiments; production at the seed farm; breeding test with Pima, and studies of hybrids, pollination, and cell-sap properties (sections prepared by T. H. Kearney).

——— LOOMIS, H. F., and VARMETTE, D. L. (341)

COMPARISON OF PIMA COTTON WITH UPLAND VARIETIES IN ARIZONA. Jour. Agr. Research 28: 937–954, illus. 1924.

Literature cited, p. 953.

"Adjacent plantings of Pima Egyptian and several Upland varieties of cotton were made at Sacaton, Ariz., from 1920 to 1923, and data of plant behavior secured on habits of growth, flowering, shedding, yields, and lint and boll characters. A series of measurements on selected groups of 25 plants of each variety were conducted through the seasons of 1922 and 1923."

——— (342)

CROP TESTS AT THE COOPERATIVE TESTING STATION, SACATON, ARIZ. Dept. Circ. 277, 40 pp., illus. 1923.

Tests with cotton are included, pp. 9–16; root rot, pp. 35–37; Breeding work with Egyptian cotton, report by T. H. Kearney, pp. 39–40.

——— (343)

WATER-STRESS BEHAVIOR OF PIMA COTTON IN ARIZONA. Dept. Bull. 1018, 24 pp., illus. 1922.

Literature cited, pp. 23–24.

"An investigation of the practicability of using soil-moisture determinations as an index of the water requirement for growing Pima cotton was begun in 1918 and continued through the year 1919, in the belief that definite information would be of value in determining the best methods of irrigation." Water relations and the shedding of immature bolls, pp. 11–15.

KNAPP, BRADFORD. (344)

EMERGENCY CROPS FOR OVERFLOWED LANDS IN THE MISSISSIPPI VALLEY. Bur. Plant Indus., Farmers' Coop. Demon. Work, Unnumb. Pub., 8 pp. 1912.

Cotton, pp. 2–3.

——— (345)

FIELD INSTRUCTIONS FOR FARMERS' COOPERATIVE DEMONSTRATION WORK. Bur. Plant Indus. Doc. 523 (rev. ed.), 8 pp. 1912.

Revision of Bureau Plant Industry Document 344, Field Instructions for Farmers' Cooperative Demonstration Work, by S. A. Knapp. 1911.

Gives outlines of cultural methods recommended for cotton.

——— (346)

SOME RESULTS OF THE FARMERS' COOPERATIVE DEMONSTRATION WORK. Yearbook 1911: 285–296, illus. 1912.

Results are given of 7 years' work since the organization of the service by S. A. Knapp in 1904 in Texas. Information on bollweevil control and crop diversification was carried to farmers by about 600 agents. A table shows "increased average yield of cotton and corn on demonstration farms over the average yield in several Southern States in 1909 and 1910" (p. 290).

KNAPP, S. A. (347)
AGRICULTURAL METHODS FOR BOLL-WEEVIL DISTRICTS. Bur. Plant Indus. Doc. 136, 8 pp. 1905.
Contains the principal points covered in Farmers' Bulletin 189, Information Concerning the Mexican Cotton Boll Weevil, by W. D. Hunter, 1904, in addition to general cultural recommendations.

——— (348)
FAMILIAR TALKS ON FARMING. CULTIVATION OF THE CROP. Bur. Plant Indus. Doc. 365, 3 pp. 1908
Recommendations for cultivating cotton.

——— (349)
THE PRODUCTION OF COTTON UNDER BOLL WEEVIL CONDITIONS. Bur. Plant Indus. Doc. 619, 8 pp. 1911.

LETTEER, C. R. (350)
EXPERIMENTS IN CROP PRODUCTION ON FALLOW LAND AT SAN ANTONIO [TEXAS]. Dept. Bull. 151, 10 pp., illus. 1914.
Corn, cotton, and winter oats were used in the experiments, which covered the years 1911–13. "In this paper the word 'fallow' is used to mean thorough cultivation of the land from the time it is plowed after the removal of a crop throughout the next season and until the crop is planted at the beginning of the second season" (p. 1).

——— (351)
THE WORK OF THE SAN ANTONIO (TEXAS) EXPERIMENT FARM IN 1918. Dept. Circ. 73, 38 pp., illus. 1920.
Experiments with cotton, pp. 15–16.

LUDWIG, C. A. (352)
SOME FACTORS CONCERNING EARLINESS IN COTTON. Jour. Agr. Research 43: 637–659, illus. 1931.
Literature cited, pp. 657–659.
"The following topics have been investigated and are considered here: (1) Varietal differences in the maturation periods of squares and bolls; (2) effect on the maturation periods of the time of application of nitrogenous fertilizer; (3) effect of the amount of nitrogenous fertilizer applied; (4) effect of the spacing of the plants; (5) effect of duration of cultivation; (6) effect of stripping the forms; and (7) the rate of development of the bolls."

LYMAN, J. B. (353)
COTTON PLANTING. Dept. Agr. Rpt. 1866: 93–211. 1867.
Selection of a cotton farm; stock, laborers, and implements; how cotton should be planted; enemies of the plant and how to destroy them; picking; ginning, baling, and marketing; improved and scientific cultivation; improvements in seed.

MCKEEVER, H. G. (354)
SPACING EXPERIMENTS WITH ACALA COTTON IN SOUTHERN CALIFORNIA. Jour. Agr. Research 28: 1081–1093, illus. 1924.
Experiments with cotton grown on irrigated land. Yields are shown in table I (p. 1085).

MCLACHLAN, ARGYLE. (355)
THE CULTURE OF DURANGO COTTON IN THE IMPERIAL VALLEY [CALIFORNIA]. Bur. Plant Indus. Circ. 121: 3–12. 1913.
"The object of the present paper is to call attention to special methods and precautions that need to be observed in the development of a long-staple industry under the local conditions."

MCNAMARA, H. C. (356)
COTTON-SPACING EXPERIMENTS AT GREENVILLE, TEXAS. Dept. Bull. 1473, 48 pp., illus. 1927.
"The spacing experiments discussed in this report extend over a period of five years, from 1921 to 1925, inclusive, and include many repetitions. The combined results show larger yields from the closer spacings and indicate that cotton plants generally are left in the fields at distances too far apart to obtain the best yields."

——— HUBBARD, J. W., and BECKETT, R. E. (357)
GROWTH AND DEVELOPMENT OF COTTON PLANTS AT GREENVILLE, TEX. Dept. Circ. 401, 18 pp., illus. 1927.
Growth and development under various cultural methods as affected by environmental conditions.

MEADE, R. M. (358)
SINGLE-STALK COTTON CULTURE AT SAN ANTONIO. Dept. Bull. 279, 20 pp., illus. 1915.
Gives results of a series of tests made in 1914 on the United States Experiment Farm at San Antonio, Tex. The advantages of the single-stalk system as compared with wide spacing are shown.

MELOY, G. S., and DOYLE, C. B. (359)
MEADE COTTON, AN UPLAND LONG-STAPLE VARIETY REPLACING SEA ISLAND. Dept. Bull. 1030, 24 pp., illus. 1922.
Literature cited, p. 24.
Meade cotton was the subject of experimentation, in 1917 and 1918 in various sections of the Cotton Belt, in an effort to replace the sea-island variety, because of bollweevil injury to the latter. Origin and history of the Meade variety are given, and cultivation and production during 1920. Comparative spinning tests of Meade and sea-island, and Meade and Egyptian Sakellaridis, pp. 20–22.

MILLER, H. A. (360)
A SIMPLE WAY TO INCREASE CROP YIELDS. METHODS FOLLOWED BY FARMERS OF THE COASTAL PLAIN SECTION OF THE CENTRAL ATLANTIC STATES IN BUILDING UP SOIL FERTILITY. Farmers' Bull. 924 (rev. ed.), 20 pp., illus. 1932.
Issued 1918; revised 1932.
Examples of soil improvement. A cotton farm, pp. 17–18. This farm was located in the southeastern part of Virginia. "The following 2-year rotation was put in operation: First year—Cotton plus crimson clover after first picking. Second year—Corn plus cowpeas at last cultivation."

NOBLE, E. G. (361)
THE WORK OF THE YUMA RECLAMATION PROJECT EXPERIMENT FARM IN 1919 AND 1920. Dept. Circ. 221, 37 pp., illus. 1922.
"The Yuma Experiment Farm, which includes 160 acres, is located on the Yuma reclamation project and adjoins the town site of Bard on the California side of the Colorado River. The work of the farm is under the immediate supervision of the Division of Western Irrigation Agriculture, while arrangements are provided for some special experiments under the direction of representatives of other offices of the Bureau of Plant Industry."
Cotton, pp. 15–22. Variety tests; furrow-and-bed method of growing Pima cotton; fertilizers; selection; improvement of varieties.

ORTON, W. A. (362)
SEA ISLAND COTTON. Farmers' Bull. 787, 40 pp., illus. 1916.
Revision of Farmers' Bulletin 302, Sea Island Cotton: Its Culture, Improvement, and Diseases, by W. A. Orton. 1907.

OSBORN, W. M. (363)
ROTATION AND TILLAGE EXPERIMENTS AT THE LAWTON (OKLA.) FIELD STATION, 1917–30. Tech. Bull. 330, 35 pp. illus. 1932.
Results with cotton, pp. 21–25. Acre yield (in pounds) of cotton lint and seed cotton grown by different methods at the Lawton field station, 1917–30, table 14 (pp. 22–23).

PATTEN, H. E., and WAGGAMAN, W. H.
ABSORPTION BY SOILS. Bur. Soils Bull. 52, 95 pp., illus. 1908.
Selective absorption. Cotton, pp. 30–31. Absorption of potash from potassium chloride solutions.

PETERSON, W. A. (365)
THE WORK OF THE YUMA EXPERIMENT FARM IN 1912. Bur. Plant Indus. Circ. 126: 15–25, illus. 1913.
Cotton (pp. 20–21). "In addition to the breeding and extension work with Egyptian cotton, extensive experiments along cultural lines have been carried on at the Yuma farm by the Office of Acclimatization and Adaptation of Crop Plants and Cotton-Breeding Investigations. It has been demonstrated that cotton can be reproduced from mature wood cuttings and that cotton plants can be volunteered by protecting the bases of the stems with soil during the winter."

PHILLIPS, M. W. (366)
REMARKS ON THE CULTIVATION OF COTTON. U.S. Commr. Patents Rpt. 1849 (Agr.): 313–315. 1850.
Preparation of land and planting.

RATLIFFE, G. T., and ATKINS, I. M. (367)

CROP ROTATION AND TILLAGE EXPERIMENTS AT THE SAN ANTONIO (TEXAS) FIELD STATION. Circ. 193, 39 pp., illus. 1931.

Cotton. Crop yield in detail, pp. 14–16. Comparison of effects of rotations and cultural treatments on crop yields, pp. 29–33. "Cotton yields were generally higher in rotations than under continuous cropping."

——— (368)

THE WORK OF THE SAN ANTONIO [TEXAS] EXPERIMENT FARM IN 1919 AND 1920. Dept. Circ. 209, 39 pp., illus. 1922.

Literature cited, p. 39.

Experiments with cotton in 1920, pp. 15–19. "A variety test and a cultural experiment were planted, and breeding work with the Kekchi, Acala, and Lone Star varieties was continued."

REDDING, R. J. (369)

ESSENTIAL STEPS IN SECURING AN EARLY CROP OF COTTON. Farmers' Bull. 217, 16 pp., illus. 1905.

Discusses preparation of the soil, fertilizers, selecting the variety and planting, spacing the plants, cultivating the crop, clearing away the plants in autumn.

SCOFIELD, C. S. (370)

AGRICULTURE ON THE YUMA RECLAMATION PROJECT. Bur. Plant Indus. Circ. 124: 3–8. 1913.

"While alfalfa in rotation with cotton may serve as the basis of a profitable agriculture, particularly if accompanied by one or more of the possible animal industries, it is to be expected that several of the more intensive plant industries, such as orchard fruits, will be developed."

——— (371)

EGYPTIAN COTTON CULTURE IN THE SOUTHWEST. Bur. Plant Indus. Circ. 123: 21–28, illus. 1913.

Describes experimental plantings by farmers in the Salt River Valley, Ariz., and the Imperial Valley, Calif.

——— (372)

SUGGESTIONS ON GROWING EGYPTIAN COTTON IN THE SOUTHWEST. Bur. Plant Indus. Doc. 717, 10 pp., illus. 1912.

Monthly range of prices (in cents per pound) quoted at Boston for Egyptian cotton and at Savannah for Middling upland cotton from November 1909 to October 1911.

SMITH, LONGFIELD. (373)

SEA ISLAND COTTON IN ST. CROIX. Virgin Islands Agr. Expt. Sta. Bull. 1, 14 pp., illus. 1921.

"Sea Island cottonseed was imported into the Virgin Islands from Barbados about 1908, and cotton raising has become one of the principal industries of the islands where the soil and climate are well suited to its cultivation. The area devoted to it, though at present small, is producing very well, the average yield of seed cotton in 1919–20 being around 1,000 pounds per acre. One of the plats at the experiment station produced at the rate of 4,450 pounds of seed cotton per acre" (p. 3.) Includes description of breeding and cultural methods; ginning and marketing; yield; diseases and pests. Process of sunning and whipping is mentioned on page 10. "Seed cotton is usually spread out in long trays to be sunned for a day before whipping. This operation consists in striking the seed cotton on a piece of stout mesh wire forming the bottom of the tray. When the dirt has passed through the tray, the stained and weak cotton, all leaves, and hardened bolls are picked out. After being cleaned the cotton is sent to be ginned and baled."

TYLER, F. J. (374)

VARIETIES OF AMERICAN UPLAND COTTON. Bur. Plant Indus. Bull. 163, 127 pp., illus. 1910.

Gives origin of upland varieties as a whole; defines botanical terms used in descriptions; classifies varieties as to groups (such as big-boll group, long-staple group, etc.); lists and describes varieties alphabetically by name, giving States and counties where grown, references to literature, history, and characteristics, pp. 24–122.

UNITED STATES DEPARTMENT OF AGRICULTURE. (375)

COTTON. Dept. Agr. Rpt. 1862: 104–113, illus. 1863.

What cotton is and where it grows; its climate; the best cotton soil: preparation of the soil; planting and culture; result of an experiment in growing cotton north of its accustomed limits; statistics (world manufactures, 1850; production, 1856; exports, 1860; imports into Great Britain, 1850 and 1860.)

——— COTTON COUNCIL. (376)

IMPROVING THE QUALITY OF AMERICAN COTTON. 7 pp. [1922] [Mimeographed.]

"This statement was prepared by a special committee and approved by the Cotton Council of the Department of Agriculture, and represents a summary of the Department's attitude at present."

"Varieties of cotton recommended for specific conditions or regions or indicated as outstanding" by the state experiment stations, list (pp. 3–7.)

——— OFFICE OF EXPERIMENT STATIONS. (377)

THE COTTON PLANT: ITS HISTORY, BOTANY, CHEMISTRY, CULTURE, ENEMIES, AND USES. Off. Expt. Stas. Bull. 33, 433 pp., illus. 1896.

Also issued as U.S. Cong., 54th, 2d sess., House Doc. 267, Serial no. 3536.

Bibliographies at end of chapters; Supplemental bibliography of cotton, pp. 423–433.

Contents: Introduction, by C. W. Dabney, Jr.; History and General Statistics of Cotton, by R. B. Handy; Botany of Cotton, by W. H. Evans; Chemistry of Cotton, by J. B. McBryde and W. H. Beal; Climatology and Soils, by Milton Whitney; The Manuring of Cotton, by H. C. White; Cultivated Varieties of Cotton, by S. M. Tracy; Culture of Cotton, by Harry Hammond; Experiments in Cotton Culture by the Experiment Stations; Diseases of Cotton, by G. F. Atkinson; The Insects Which Affect the Cotton Plant in the United States, by L. O. Howard; The Handling and Uses of Cotton, by Harry Hammond; The Feeding Value of Cotton Seed Products, by B. W. Kilgore.

——— BUREAU OF MARKETS. (378)

BRIEF HISTORY OF DEVELOPMENT OF AMERICAN-EGYPTIAN PIMA COTTON. 3 pp. 1918. [Mimeographed.]

Short account of the origin of this variety; description of production in Arizona; and summary of spinning tests, 1915–18.

——— BUREAU OF PLANT INDUSTRY LIBRARY. (379)

AGRONOMY; CURRENT LITERATURE. January 1926—date, biweekly. [Mimeographed.]

A bibliography compiled from material received in the Department of Agriculture library.

Publications on field cultivation of cotton included.

——— BUREAU OF PLANT INDUSTRY. COMMITTEE ON SOUTHWESTERN COTTON CULTURE. (380)

COTTON AS A CROP FOR THE YUMA RECLAMATION PROJECT. Bur. Plant Indus. Doc. 1009, 6 pp. 1913.

The committee on Southwestern cotton culture was composed of C. S. Scofield, C. J. Brand, O. F. Cook, T. H. Kearney, and W. T. Swingle. The growing of Egyptian cotton is recommended.

——— STATES RELATIONS SERVICE. (381)

METHODS OF GROWING COTTON UNDER BOLL-WEEVIL CONDITIONS. States Relat. Serv. Doc. 36, Ext. S. "A"–71, 8 pp. 1917.

"The result of the experience of the demonstration work for the past 12 years in several of the more western cotton states."

UNITED STATES PATENT OFFICE. (382)

COTTON. HISTORY AND CULTURE IN MISSISSIPPI [CONDENSED FROM WAILES' REPORT ON THE AGRICULTURE AND GEOLOGY OF MISSISSIPPI]. U.S. Commr. Patents Rpt. 1854 (Agr.): 177–181. 1855.

——— (383)

COTTON. HISTORY AND RESULTS OF THE CULTURE OF COTTON IN BRITISH INDIA. U.S. Commr. Patents Rpt. 1855 (Agr.): 226–230. 1856.

WALKER, R. M. (384)

SEA ISLAND COTTON IN PORTO RICO. P.R. Agr. Expt. Sta. Circ. 3, 4 pp. Mayaguez. 1904.

General information for planters.

WEBBER, H. J., and BOYKIN, E. B. (385)
THE ADVANTAGE OF PLANTING HEAVY COTTON SEED. Farmers' Bull. 285, 16 pp., illus. 1907.
"This paper embodies the results of experiments in the separation of cotton seed, and shows the advantage to growers of making such a separation of their seed for planting. The methods presented and the apparatus described are new and are of great importance to the cotton industry."

——— (386)
THE GROWING OF LONG-STAPLE UPLAND COTTONS. Yearbook 1903: 121–136, illus. 1904.
Contains a short history of the introduction of long-staple cottons into the United States; descriptive notes on the varieties; methods of cultivating, picking, ginning, marketing. Prices for cotton of different lengths of staple at Yazoo City, Miss., are given in a table (p. 136).

YOUNGBLOOD, BONNEY. (387)
RELATION OF SOIL FERTILITY TO THE QUALITY OF COTTON . . . ADDRESS AT THE MEETING OF THE SOUTHERN AGRICULTURAL WORKERS, HOUSTON, TEXAS, FEBRUARY 6, 1929. 7 pp. Bur. Agr. Econ. [1929]. [Mimeographed.]

FERTILIZERS

ALLISON, F. E. (388)
CYANAMID, ITS USES AS A FERTILIZER MATERIAL. Circ. 64, 12 pp.. illus. 1929.
Use on cotton, pp. 9–10. "Cotton may receive up to about 100 pounds of cyanamid in the row, but not in contact with the seed." Photographs illustrate effect of use and nonuse on growth of the plants.

——— BRAHAM, J. M., and MCMURTREY, J. E., Jr. (389)
FIELD EXPERIMENTS WITH ATMOSPHERIC-NITROGEN FERTILIZERS. Dept. Bull. 1180, 44 pp., illus. 1924.
Experiments during 1919, 1920, and 1921 at the Government nitration-fixation plants at Muscle Shoals and Sheffield, Ala., of the effect of cyanamid, ammonium nitrate, and other synthetic-nitrogen products when used as fertilizers. Cotton and corn were the principal crops used. Cyanamid proved the least satisfactory as a source of nitrogen.

BEAVERS, J. C. (390)
FARM PRACTICE IN THE USE OF COMMERCIAL FERTILIZERS IN THE SOUTH ATLANTIC STATES. Farmers' Bull. 398, 24 pp., illus. 1910.
Fertilizing cotton, pp. 17–19. Quantity and composition of fertilizer mixtures suggested for application to each acre of cotton grown on various kinds of soil, table 4 (p. 18).—Quantity and composition of a mixed fertilizer of definite analysis suggested for application to each acre of cotton grown on various kinds of soil, table 5 (p. 19).

BROWN, B. E., and SKINNER, J. J. (391)
POTASH HUNGER IN WAR YEARS TAUGHT LESSON. Yearbook 1926: 593–595, illus. 1927.
Cotton-rust problems, pp. 594–595. "In the case of cotton, the lack of potash was particularly marked on sandy soils and resulted in a condition known to cotton growers as cotton rust."

DAVIS, R. O. E. (392)
FERTILIZER'S VALUE MEASURED IN TESTS IN NORTH CAROLINA. Yearbook 1930: 263–266, illus. 1930.
Data from experiments at the North Carolina Agricultural Experiment Station are discussed. The relation of the cost of fertilizer to the total cost of the crop is shown in charts.

FRED, E. B. (393)
RELATION OF GREEN MANURES TO THE FAILURE OF CERTAIN SEEDLINGS. Jour. Agr. Research 5: 1161–1176, illus. 1916.
Literature cited, pp. 1175–1176.
Effect of time of planting and quantity of green manure on the germination of cotton seed, pp. 1164–1165. "From the data of this experiment it is very evident that the serious injury caused by green manures is only temporary."

[MCBRYDE, J. B.] (394)
FERTILIZING CONSTITUENTS CONTAINED IN A CROP OF COTTON YIELDING 100 POUNDS OF LINT PER ACRE. [POUNDS PER ACRE.] Yearbook 1896: 615. 1897.
Table.

McBryde, J. B. (395)
FERTILIZING CONSTITUENTS CONTAINED IN A CROP OF COTTON YIELDING 300 POUNDS OF LINT PER ACRE. Yearbook 1895: 569. 1896.
Table.

McBryde, J. M. (396)
FERTILIZERS FOR COTTON. Farmers' Bull. 14, 31 pp., illus. 1894.
The discussion in this bulletin is based on experiments at the South Carolina Agricultural Experiment Station.

Mehring, A. L., and Cumings, G. A. (397)
EFFECTS ON COTTON OF IRREGULAR DISTRIBUTION OF FERTILIZERS. Jour. Agr. Research 44: 559–570, illus. 1932.

Skinner, J. J. (398)
FERTILIZER COMPOSITION AND PLACEMENT PLAY BIG PART IN COTTON GROWING. Yearbook 1933: 118–121. 1933.

——— (399)
FERTILIZER MATERIALS FOR COTTON GROWING MUST BE WELL CHOSEN. Yearbook 1930: 259–262, illus. 1930.
"Experiments conducted by the department deal with the nutrition of the cotton plant, its response to different forms of nitrogen and potash, to varying quantities of fertilizers, and a study to determine the ratio of nitrogen, phosphoric acid, and potash suitable for cotton on prominent soil types."

——— (400)
FERTILIZER PLACEMENT OF VAST IMPORTANCE IN COTTON-GROWING STATES. Yearbook 1932: 538–541, illus. 1932.
Experiments made on cotton in South Carolina are described.

——— (401)
FERTILIZERS FOR COTTON SOILS. Misc. Pub. 126, 10 pp., illus. 1931.

——— and Allison, F. E. (402)
INFLUENCE OF FERTILIZERS CONTAINING BORAX ON THE GROWTH AND FRUITING OF COTTON. Jour. Agr. Research 23: 433–444, illus. 1923.
Literature cited, p. 443.

——— (403)
NEW FERTILIZER MATERIALS AND THEIR USES. 8 pp. Bur. Chem. and Soils. [1928] [Mimeographed.]
Presented at Fertilizer Short Course of Department of Agronomy, North Carolina Agricultural Experiment Station, Raleigh, N.C., August 1928.
The effect of concentrated air-derived nitrogen salts used on cotton in North Carolina soils.

——— (404)
RESULTS OF FERTILIZER EXPERIMENTS ON NORFOLK FINE SANDY LOAM AND ON NORFOLK SANDY LOAM. Tech. Bull. 225, 23 pp., illus. 1931.
Experiments reported were made on cotton and corn at Pee Dee Experiment Station, S.C., 1919–23, and at Darlington, S.C., 1922–24.

——— (405)
"THE USE OF COMMERCIAL FERTILIZER IN THE GROWING OF COTTON." 8 pp., illus. Bur. Chem. and Soils. 1930. [Mimeographed.]
Address delivered before the Agronomy Section of the North Carolina Farmers' Convention, State College, Raleigh, N.C., July 31, 1930.

United States Department of Agriculture. (406)
THE MANURING OF COTTON. Farmers' Bull. 48, 16 pp., illus. 1897.
Condensed from an article by H. C. White, in Bulletin 33 of the Office of Experiment Stations.

——— Division of Statistics. (407)
THE FERTILIZER INDUSTRY: REVIEW OF STATISTICS OF PRODUCTION AND CONSUMPTION, WITH ABSTRACTS OF STATE LAWS FOR ANALYSIS AND SALE. Div. Statis. Bull. (misc. ser.) 13, 27 pp., illus. 1898.
Fertilizers and profit in cotton raising, pp. 16–19. Relationship between the cost of fertilizers and profit or loss in raising cotton in 1896, table 10 (pp. 18–19).

WHITNEY, MILTON. (408)
FERTILIZERS FOR COTTON SOILS. Bur. Soils Bull. 62, 24 pp., illus. 1909.
Results of 2,802 fertilizer tests reported by experiment stations. A large percentage of the tests were made from 1888 to 1893.

FARM MANAGEMENT

BAKER, O. E., BROOKS, C. F., COVERT, J. R., and HAINESWORTH, R. G. (409)
SEEDTIME AND HARVEST. A GRAPHIC STUDY OF SEASONAL WORK ON FARM CROPS. Dept. Circ. 183, 53 pp., illus. 1922.
Cotton, pp. 36–39.

BERCAW, L. O., compiler. (410)
LABOR REQUIREMENTS OF FARM PRODUCTS IN THE UNITED STATES. A LIST OF REFERENCES TO MATERIAL PUBLISHED SINCE 1922. Bur. Agr. Econ. Libr., Agr. Econ. Bibliog. 26, 62 pp. 1929. [Mimeographed.]
For references to cotton, see the index.

BOEGER, E. A., and GOLDENWEISER, E. A. (411)
A STUDY OF THE TENANT SYSTEM OF FARMING IN THE YAZOO-MISSISSIPPPI DELTA. Dept. Bull. 337, 18 pp., illus. 1916.
"The principal factor in determining the amount of the tenant's labor income and the rate of the landlord's profits in this region is the yield of cotton per acre." A study made in 1913 and "based on 878 records relating to the business of tenants on plantations in the Yazoo-Mississippi Delta. Comparison is made between share croppers, who supply nothing but their labor and receive one-half of the crop; share-renters, who supply their own implements and livestock and receive two-thirds or three-fourths of the crop; and cash renters, who supply the same items as share renters but pay a fixed rent in cash or lint cotton."

BRODELL, A. P. (412)
LABOR REQUIREMENTS MEASURED FOR PRINCIPAL CROPS. Yearbook 1926: 466–467. 1927.
"Requirements for producing a pound of lint cotton * * * range from about 0.7 hour of man labor in the Eastern States to about 0.2 hour in the western district of Texas * * * In parts of Texas and Oklahoma growers frequently plant as much as 100 acres of cotton per man with extra labor for hoeing, thinning, and harvesting. Growers in the eastern cotton States usually plant from 10 to 20 acres per man."

BRODIE, D. A. (413)
BUILDING UP A RUN-DOWN COTTON PLANTATION. Farmers' Bull. 326, 22 pp., illus. 1915.
"An account of the progress made in 3 years in changing a run-down cotton plantation into a profitable stock and hay farm." Comparison of cotton operations for 1905, 1906, and 1907, pp. 6–9. Results show "striking example of the beneficial effect of leguminous crops in building up exhausted soils."

——— and MCCLELLAND, C. K. (414)
DIVERSIFIED FARMING UNDER THE PLANTATION SYSTEM. Farmers' Bull. 299, 14 pp., illus. 1907.
The work reported in this study was carried on by the Louisiana Agricultural Experiment Station and the United States Department of Agriculture in 1906 on the plantation of William Polk, near Moreland, La. "From observations during the first year's work it was clearly seen that it was possible to establish a system of diversification on plantations and that the tenants were eager to raise other things than cotton, provided the owner was willing and they had some little instruction in the care of the new crops. However, it was noticed that true diversification is possible only where the tenant lives upon the land he tills."

CATES, H. R. (415)
FARM PRACTICE IN THE CULTIVATION OF COTTON. Dept. Bull. 511, 62 pp., illus. 1917.
Surveys were made of 19 areas throughout the Cotton Belt. Data of tillage practice, presented in tabular form, are accompanied by short summaries of various farm customs and conditions.

CLOTHIER, R. W. (416)
FARM ORGANIZATION IN THE IRRIGATED VALLEYS OF SOUTHERN ARIZONA. Dept. Bull. 654, 59 pp., illus. 1918.
"This bulletin presents the results of a farm survey of 627 farms conducted in the three larger irrigated valleys in southern Arizona. The general object of these investigations was to determine those factors of business management and farm practice which influence financial returns and lead to success or failure, in order that recommendations might be made that would lead to general financial improvement among all farmers in the districts studied." Cotton farming, pp. 38–39. "It may be safely stated * * * that with yields as high as 400 pounds of lint, and with a price as low as 15 cents a pound, cotton farming is not so profitable as other well-established enterprises, but since the price has been below 20 cents but 1 year out of the 6 in which it has been grown in Arizona, the enterprise may be strongly recommended to supplement the livestock interests now so firmly established in these districts, the crop proving admirably adapted for rotation with alfalfa."

COVERT, J. R. (417)
SEEDTIME AND HARVEST: CEREALS, FLAX, COTTON, AND TOBACCO. DATES OF PLANTING AND HARVESTING EAST OF MERIDIANS 102–104, IN THE UNITED STATES. Bur. Statis. Bull. 85, 152 pp., illus. 1912.
Cotton, pp. 92–100.

CROSBY, M. A. (418)
AN EXAMPLE OF INTENSIVE FARMING IN THE COTTON BELT. Farmers' Bull. 519, 13 pp., illus. 1913.
Study of the system followed by an Alabama farmer on a 2-acre cotton farm. "Productiveness as measured by cotton was increased from one-third of a bale to 3 bales or more to the acre", by processes of seed selection and by plowing under dead crops.

———, DUGGAR, J. F., and SPILLMAN, W. J. (419)
A SUCCESSFUL ALABAMA DIVERSIFICATION FARM. Farmers' Bull. 310, 24 pp., illus. 1907.
"The record of a 65-acre hog farm in the black prairie region of Alabama." Cotton, p. 13. Short record of cultivation of the cotton field, which was included in the farm for 1 year only.

DIXON, H. M., and HAWTHORNE, H. W. (420)
AN ECONOMIC STUDY OF FARMING IN SUMTER COUNTY, GA. Dept. Bull. 492, 64 pp., illus. 1917.
An analysis of farm management on 534 farms in a strictly cotton-growing section.

FUNK, W. C. (421)
VALUE OF A SMALL PLOT OF GROUND TO THE LABORING MAN. A STUDY OF THE FOOD RAISED BY OPERATIVES IN SOUTHERN COTTON-MILL TOWNS. Dept. Bull. 602, 12 pp., illus. 1918.
The cotton-mill village, pp. 2–3.

GIFT, G. W. (422)
COTTON UNDER HIGH CULTURE. Dept. Agr. Rpt. 1867: 409–412, illus. 1868.
Recommends a "mixed system of farming." Estimate of receipts and expenses for 25 acres, table (p. 412).

GOODRICH, C. L. (423)
COTTON GROWER OFTEN FINDS LARGER OUTLAY PAYS IN BIGGER YIELD. Yearbook 1927: 221–223, illus. 1928.
A chart "shows the average effect of increase in expenditures per acre on the yield of lint cotton per acre and on the cost per pound on 401 farms scattered throughout the Cotton Belt in 1926" fig. 59, (p. 222). The use of fertilizer, rotation systems, and approved practices of protection against insects are mentioned.

——— (424)
FACTORS THAT MAKE FOR SUCCESS IN FARMING IN THE SOUTH. Farmers' Bull. 1121, 31 pp., illus. 1920.
Practices involved in the successful management of a cotton farm.

GOODRICH, C. L. (425)
A PROFITABLE COTTON FARM. Farmers' Bull. 364, 23 pp. illus. 1909.
"An account of the progressive and successful farm operations of a farmer of South Carolina, who, by combining thorough tillage, crop rotation, barnyard manure, and a judicious use of commercial fertilizer, has changed a previously badly managed and run-down cotton farm into a very productive and profitable enterprise."

——— (426)
TESTING FARMS IN THE SOUTH FOR EFFICIENCY IN MANAGEMENT. Dept. Circ. 83, 27 pp., illus. 1920.
Field practice and labor requirements for some crops (including cotton) in central Georgia (about 100 farms) Table 13, (p. 19)

HASKELL, E. S. (427)
A FARM-MANAGEMENT SURVEY IN BROOKS COUNTY. Dept. Bull. 648, 60 pp., illus. 1918.
"This area was selected for study because here has been developed a diversified and profitable type of agriculture, with cotton retained as the chief single source of income."

HOWARD, C. W. (428)
CONDITION OF AGRICULTURE IN THE COTTON STATES. Dept. Agr. Rpt. 1874: 215–238. 1875.
Methods of improvement, pp. 220–238. The remedy for the low condition of southern agriculture "is to be found in the abandonment of exclusive cotton-culture and the devotion of a much larger area to the growth of cereals, the grasses, and the raising of livestock."

JOHNSON, O. M., and TURNER, H. A. (429)
THE OLD PLANTATION PIEDMONT COTTON BELT. A PRELIMINARY REPORT. 32 pp. Bur. Agr. Econ., 1930. [Mimeographed.]
List of references, p. 32.
"This preliminary report is an attempt to picture the conditions and changes in the old plantation Piedmont as a whole, affecting at least 150,000 landowners and tenants, thus preparing the way for more intensive reports that may be forthcoming later from the various agencies that are interested in the problems of the section."

KNAPP, BRADFORD. (430)
SAFE FARMING IN THE SOUTHERN STATES IN 1920. Dept. Circ. 85, 19 pp., illus. 1920.
"By safe farming is meant a system which maintains soil fertility, produces the food and feed for the people and the livestock in sufficient quantities to insure a comfortable surplus, and produces cotton as a strictly cash crop" (p. 8).

KNAPP, S. A. (431)
FAMILIAR TALKS ON FARMING. DIVERSIFICATION. Bur. Plant Indus. Doc. 383, 4 pp. 1908.
Recommends diversification of cotton with other crops.

LANDON, M. D. (432)
COTTON (BY FREE LABOR). Dept. Agr. Rpt. 1864: 88–92, illus. 1865.
"The following article is not presented as an abstract treatise on cotton growing, but rather as a familiar history of how a thousand and forty acres of cotton were raised in Arkansas by free labor. Slavery has long seemed the *sine qua non* of successful agriculture in the South, and well is it that the present revolution has developed the grand fact of FREE LABOR; that labor *is always commensurate* with its reward. The rich bottom lands of the Mississippi are now opening to a new civilization. The dark-skinned menial, the chained hero of the soil, is becoming an individual and, with the hoe and axe, is hewing his way to citizenship." The "average amount of wages earned by each person during the summer" is shown in a table (p. 91). The average expense of raising 1,000 acres of cotton by free labor for 1 year was $30,000 or $30 per acre, "including the payment of rent to the Government or private citizen, and the purchase of new stock and implements from the North" (p. 92). A discussion of cotton insects is included.

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MANNY, T. B. (433)

FARMER OPINIONS AND OTHER FACTORS INFLUENCING COTTON PRODUCTION AND ACREAGE ADJUSTMENTS IN THE SOUTH. Circ. 258, 42 pp., illus. 1933.

"In the course of the study, 834 farmers in 11 counties were interviewed * * * These counties were selected as representative of three principal cotton-growing areas east of the Mississippi River: The Mississippi Delta, the piedmont, and the South Atlantic coastal plain." The objectives of the study may be summarized as follows: "(1) To note recent changes in acreage planted to cotton and to other important crops. (2) To learn the reasons given by farmers for planting the specific acreages they did. (3) To determine, if possible, the premises upon which these farmer decisions were based and the sources of information used in arriving at decisions of this kind. (4) To note the extent to which interviewed farmers received and utilized the outlook information prepared and distributed by Federal and State agencies. (5) To note general differences as regards the acreage adjustments between farmers as classified by various factors such as size of farm, tenure, schooling, length of farm experience, etc. (6) To discover the chief sources of resistance to adjustments in the farm business, especially sources that are not exclusively economic in character" (p. 1–2). Includes tables giving acreage statistics, 1926–31.

SMITH, A. G. (434)

A FARM-MANAGEMENT STUDY IN ANDERSON COUNTY, SOUTH CAROLINA. Dept. Bull. 651, 32 pp., illus. 1918.

"In a farm-management and cost-determination survey of 112 farms in Williamston, Belton, Broadway, and Honeapath Townships, in Anderson County, S.C. * * * it was found that in the organization and operation of the farms there are three outstanding factors that determine the degree of success. These are (1) yields; (2) efficiency in use of labor and equipment or, as it may be indicated in this region, the acres of crops grown per work animal; and (3) the combination of enterprises * * * The purpose of this bulletin is to show the bearing of these outstanding factors on the business of the farms surveyed, their influence on farm efficiency, and how that efficiency can be improved." Cotton is the predominating crop on these farms.

SPILLMAN, W. J., and others. (435)

DIVERSIFIED FARMING IN THE COTTON BELT. I. SOUTH ATLANTIC COAST, BY W. J. SPILLMAN. II. ALABAMA AND MISSISSIPPI, BY M. A. CROSBY. III. LOUISIANA, ARKANSAS, AND NORTHEASTERN TEXAS, BY D. A. BRODIE. IV. TEXAS, BY C. W. WARBURTON. Yearbook 1905: 193–218, illus. 1906.

THIBODEAUX, B. H., and WELLS, O. V. (436)

USE OF OUTLOOK INFORMATION IN FARM-BUSINESS PLANNING IN THE COTTON BELT. A PRELIMINARY REPORT. 47 pp., illus. Bur. Agr. Econ., 1932. [Mimeographed.]

Detailed budget for cotton farm table 2, (pp. 16–17). Charts and tables relating to cotton prices, acreage, consumption, etc., are included also. Sources of outlook information, pp. 26–27. Sources of additional information, pp. 46–47.

UNITED STATES DEPARTMENT OF AGRICULTURE. (437)

SOUTHERN AGRICULTURE. Dept. Agr. Rpt. 1867: 412–428. 1868.

Discussion of answers to a questionnaire in regard to the following subjects: Cotton acreage, cultivation methods, labor prices (1860, 1867, 1868), planting by Negroes, size of plantations, diversification, stock-growing, rotation, fertilizers, and farm implements.

——— BUREAU OF PLANT INDUSTRY. (438)

MODEL PLAN FOR A SOUTHERN FARM. Bur. Plant Indus. Doc. 290, 11 pp., illus. 1907.

A model of 160 acres of land designed for a combined cotton, hog, and dairy farm.

WILLARD, R. E. (439)

A FARM MANAGEMENT STUDY OF COTTON FARMS OF ELLIS COUNTY, TEXAS. A STATISTICAL STUDY OF THE INVESTMENT IN LAND AND EQUIPMENT, COST OF OPERATION AND OF PRODUCTION OF CROPS, AND INCOME FROM DIFFERENT TYPES OF TENURE IN 1914. Dept. Bull. 659, 54 pp., illus. 1918.

PRODUCTION COSTS

BRODELL, A. P., and COOPER, M. R. (440)
REQUIREMENTS AND COSTS FOR PICKING, SNAPPING, AND SLEDDING COTTON IN WESTERN TEXAS AND OKLAHOMA. A PRELIMINARY REPORT. 7 pp. Bur. Agr. Econ., 1927. [Mimeographed.]

COOPER, M. R., and HAWLEY, C. R. (441)
COST OF PRODUCING FIELD CROPS, 1923 (CORN, WHEAT, OATS, POTATOES, AND COTTON). Dept. Circ. 340, 28 pp., illus. 1925.
Cotton production costs, 1923, pp. 25–27. "Shown by yield groups, rather than by States and by the entire Cotton Belt." Fertilizer costs and cotton yields, p. 27.

FELDKAMP, C. L., compiler. (442)
SELECTED LIST OF REFERENCES ON THE COST OF COTTON PRODUCTION. 3 pp. Office of Farm Management, 1919. [Mimeographed.]
Entries are arranged chronologically, 1899–1919.

JENSEN, W. C. (443)
FARM MANAGEMENT AND COST INVESTIGATIONS IN ANDERSON COUNTY, SOUTH CAROLINA—1922. PRELIMINARY REPORT. 23 pp. Bur. Agr. Econ., 1924. [Mimeographed.]

LONG, L. E., and SWINSON, C. R. (444)
COST OF PRODUCING COTTON IN FIFTEEN SELECTED AREAS, 1923. PRELIMINARY REPORT. 18 pp., illus. Bur. Agr. Econ., 1925. [Mimeographed.]
The areas selected for study were Johnson County, N.C.; Darlington County, S.C.; Greene and Sumter Counties, Ga.; Madison and Chilton Counties, Ala.; Madison and Bolivar Counties, Miss.; Lee and Faulkner Counties, Ark.; McIntosh and Grady Counties, Okla.; and Rusk, Ellis, and Lubbock Counties, Tex.

MOORHOUSE, L. A., and COOPER, M. R. (445)
THE COST OF PRODUCING COTTON (842 RECORDS 1918). Dept. Bull. 896, 59 pp., illus. 1920.
The investigation covered farms in 10 districts in Alabama, Georgia, South Carolina, and Texas. "The basic factors of production constitute the fundamental data of this report * * * Such factors include the hours of man and mule labor utilized in growing the crop; the quantity of seed used; the amount of fertilizer applied per acre; and the quantities used of such other materials as are necessary in growing cotton." Variation in cost of producing cotton (net cost per pound of lint) on farms studied (tables 1a–10a, appendix, pp. 50–59).

UNITED STATES PATENT OFFICE (446)
"WHAT DOES IT COST A POUND TO GROW COTTON?" U.S. Commr. Patents Rpt. 1849 (Agr.): 309–313. 1850.
"From the National Intelligencer."
Items of expense on several farms are discussed.

WATKINS, J. L. (447)
THE COST OF COTTON PRODUCTION. Div. Statis. Bull. (misc. ser.) 16, 99 pp., illus. 1899.
Average cost of producing an acre of cotton in 1896 on farms showing a profit, by counties [Alabama, Arkansas, Florida, Georgia, Indian Territory, Louisiana, Mississippi, Missouri, North Carolina, South Carolina, Oklahoma Territory, Tennessee, Texas, Virginia] table 20, (pp. 67–87). Average cost of producing an acre of cotton in 1896 on farms showing a loss, by counties [in the same States] table 21 (pp. 88–99).
Tables give 1896 costs of rent of land, plowing, seed for planting, planting, fertilizers, distributing fertilizers, chopping (to stand), hoeing, picking, ginning and pressing, bagging and ties, marketing, repairing implements, and incidental expenses. Cost of cotton production under the slave-labor system and under the free-labor system, pp. 41–56.

PRODUCTION CREDIT

MOORE, A. N. (448)
CREDIT PROBLEM IN COTTON STATES HAS SEVERAL ASPECTS. Yearbook 1927: 240–242. 1928.
Discussion is based on data gained from a questionnaire, regarding the marketing of the 1926 crop, which was sent to cotton growers in 10 States.

ROWE, W. H. (449)
AGRICULTURAL CREDIT CORPORATIONS AFFILIATED WITH COTTON COOPERATIVE MARKETING ASSOCIATIONS. Tech. Bull. 322, 64 pp., illus. 1932.

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AN ANALYSIS OF THE SOUTH CAROLINA AGRICULTURAL LOAN ASSOCIATION. A PRELIMINARY REPORT. 30 pp., illus. Bur. Agr. Econ., 1931. [Mimeographed.]

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THE TEXAS COTTON GROWERS FINANCE CORPORATION. A PRELIMINARY REPORT. 38 pp. Bur. Agr. Econ., 1931. [Mimeographed.]

WICKENS, D. L. (452)
CREDIT STUDY IN THE SOUTHEAST REVEALS SHIFT TO CASH LOANS. Yearbook 1927: 242–243. 1928.
"Reports from over 4,000 farmers in 1926, three-fourths of whom were owners, showed that the average amount of short-term credit used per farm in 10 cotton States was about $340 * * * Expenditure for fertilizer usually appears as the principal purpose in borrowing in the Southeast."

FARM ENGINEERING

BRODELL, A. P. (453)
COTTON HARVESTING BY NEWER METHODS SAVES MUCH LABOR. Yearbook 1927: 223–224. 1928.
Sledding and snapping cotton in the southwestern part of the United States.

CAMP, W. B., and TOWNSEND, J. S. (454)
UNIFORM-DEPTH PRESS-WHEEL COTTON-PLANTER ATTACHMENT. Dept. Circ. 381, 6 pp., illus. 1926.

CUMINGS, G. A., MEHRING, A. L., SKINNER, J. J., and SACHS, W. H. (455)
MECHANICAL APPLICATION OF FERTILIZERS TO COTTON IN SOUTH CAROLINA, 1931. Circ. 264, 32 pp., illus. 1933.
Third progress report of study made in South Carolina.

———, MEHRING, A. L., SERVISS, G. H., and SACHS, W. H. (456)
PROGRESS REPORT ON MECHANICAL APPLICATION OF FERTILIZERS TO COTTON IN SOUTH CAROLINA, 1930. Circ. 192, 32 pp., illus. 1931.

HASTINGS, S. H. (457)
IRRIGATION AND RELATED CULTURAL PRACTICES WITH COTTON IN THE SALT RIVER VALLEY OF ARIZONA. Circ. 200, 31 pp., illus. 1932.

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A LISTER ATTACHMENT FOR A COTTON PLANTER. Bur. Plant Indus., Crop Physiol. and Breeding Invest. Circ. 2, 3 pp., illus. 1917.

HURST, W. M., and CHURCH, L. M. (459)
POWER AND MACHINERY IN AGRICULUTRE. Misc. Pub. 157, 39 pp., illus. 1933.
Literature cited, pp. 37–38.
Power and machinery have not affected the labor requirements in cotton production so greatly as in small-grain or corn production, because of the larger amount of hand labor necessary in chopping, hoeing, and picking. However, from 1841 to 1930 the man-hours required in the production of cotton were reduced at least 50 percent in some areas (p. 5). Approximate labor requirements for major operations in the production of 1 acre of cotton (750 pounds seed cotton), table 3 (p. 4).

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SOME TYPES OF HARVESTING MACHINERY REACH HIGH STATE OF DEVELOPMENT. Yearbook 1932: 445–446. 1932.
The cotton harvester, p. 446. Mentions two types of cotton harvesters in the experimental stage: the stripper harvester, which "removes all of the crop at one operation," and the mechanical picker, which "is designed to gather only the open cotton."

MARR, J. C., and HEMPHILL, R. G. (461)
THE IRRIGATION OF COTTON. Tech. Bull. 72, 38 pp. illus. 1928.
This bulletin was prepared for the purpose of bringing together the available information on the irrigation of cotton in the United States. It includes a survey made in the States of California, Arizona, New Mexico, and Texas, and also the results of experiments carried on in Texas.

MARTIN, R. D. and LOOMIS, H. F. (462)
SUMMER IRRIGATION OF PIMA COTTON. Jour. Agr. Research 23: 927–946, illus. 1923.
Experiment conducted at the Cooperative Testing Station, Sacaton, Ariz., in 1920. "Indicates the importance of giving more attention to the spring treatment of cotton, so as to have the plants in a normal fruiting condition when summer irrigations begin. When this normal fruiting condition is attained, the summer irrigation problems are simplified, since the plants are not so easily forced into rank growth by the application of water in excess of the actual requirements."

MEHRING, A. L., and CUMINGS, G. A. (463)
FACTORS AFFECTING THE MECHANICAL APPLICATION OF FERTILIZERS TO THE SOIL. Tech. Bull. 182, 96 pp., illus. 1930.
Literature cited, pp. 94–95.
Description and illustration of types of fertilizer distributors, pp. 42–72.

REYNOLDSON, L. A., and THIBODEAUX, B. H. (464)
MECHANIZATION IN SOUTH HAS BEEN RETARDED BY LACK OF A COTTON-PICKING MACHINE. Yearbook 1932: 428–431. 1932.
"The next few years should witness the success or failure of the cotton and cane machines." Factors resistant to mechanization, p. 429. These include the cropper system of tenure based on small farming units and the diversity of crops cultivated.

TODD, S. E. (465)
IMPROVED FARM IMPLEMENTS. Dept. Agr. Rpt. 1866: 225–288, illus. 1867.
Dowlaw's cotton planter, pp. 263–264.

FARM SOCIAL PROBLEMS

TURNER, H. A., and HOWELL, L. D. (466)
CONDITION OF FARMERS IN A WHITE-FARMER AREA OF THE COTTON PIEDMONT, 1924–26. Circ. 78, 78 pp., illus. 1929.
Results of a study made in the summer of 1925 of "the tenure status, financial progress, and standards of living" of a group of 300 white farmers in Gwinnett County, Ga., a "typical cotton county." "The general facts presented are more particularly representative of conditions in the upper counties of the cotton-growing piedmont."

COOPERATIVE PRODUCTION

COOK, O. F. (467)
COMMON ERRORS IN COTTON PRODUCTION. Farmers' Bull. 1686, 26 pp., illus. 1932.
Discusses certain cultural practices and improper ginning as factors in production of inferior cotton. Suggests organization of 1-variety communities as an improvement measure.

——— and MARTIN, R. D. (468)
COMMUNITY COTTON PRODUCTION. Farmers' Bull. 1384, 21 pp. 1924.
Factors in judging varieties, pp. 15–17.

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COTTON COMMUNITIES GROWING ONE VARIETY ONLY ARE INCREASING. Yearbook 1927: 215–219, illus. 1928.
Illustration shows effect of selection in cotton, figure 57 (p. 218): "The photograph shows uniform fiber on seeds from successive plants in a selected stock, compared with irregular fiber from successive plants in a mixed gin-run stock."

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COTTON FIBER IMPROVEMENT NECESSITATES COMMUNITY ACTION TO KEEP SEED PURE. Yearbook 1932: 145–148, illus. 1932.

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COTTON IMPROVEMENT ON A COMMUNITY BASIS. Yearbook 1911: 397–410. 1912.

Cook, O. F. (472)
COTTON PROGRESS IN IRRIGATED VALLEYS A COMMUNITY PROBLEM. Yearbook 1928: 238–240, illus. 1929.
"With production based on one variety, the crop can be standardized by reference to the conditions of growth. Working out these relations in the irrigated districts [of California] may be to the great advantage of the entire Cotton Belt."

——— and Doyle, C. B. (473)
ONE-VARIETY COMMUNITY PLAN SHOWS NUMEROUS PRACTICAL ADVANTAGES. Yearbook 1933: 132–138. 1933.

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ONE-VARIETY COTTON COMMUNITIES. Dept. Bull. 1111, 51 pp. 1922.
Reissued in 1927.
List of publications on community cotton improvement, pp. 49–50.

Doyle, C. B. (475)
COTTON GROWING IN ONE-VARIETY COMMUNITIES. Yearbook 1926: 263–267, illus. 1927.
"The advantage of community production comes in two ways—the community cotton is of better quality and can be sold at a higher price."

McKeever, H. G. (476)
COMMUNITY PRODUCTION OF ACALA COTTON IN THE COACHELLA VALLEY OF CALIFORNIA. Dept. Bull. 1467, 48 pp., illus. 1927.
"The objective here has been to describe the development of an actual one-variety community from a mixed-variety condition, enumerating the difficulties encountered and the way in which they were surmounted. Many of the advantages of one-variety production are of course mentioned, but they are the ones incidental to the problems encountered and are discussed primarily from the standpoint of actual improvements effected."

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COTTON COMMUNITIES SHOWING MORE INTEREST IN ONE-VARIETY PLAN. Yearbook 1932: 139–140, illus. 1932.
The steps to be taken in organizing a 1-variety community are outlined.

McLachlan, Argyle. (478)
COMMUNITY PRODUCTION OF DURANGO COTTON IN THE IMPERIAL VALLEY. Dept. Bull. 324, 16 pp. 1915.
History of the industry in the Imperial Valley of California since 1902; varieties grown; connection of exchanges, associations and 1-variety communities in stabilizing the long-staple cotton industry.

Meloy, G. S. (479)
PURE SEED IN RELATION TO COMMUNITY PRODUCTION OF COTTON. 13 pp. Bur. Markets [1920] [Mimeographed.]
A paper read at the conference of the Cotton Division, New Orleans, La., June 23–25, 1920.
Community production of single varieties, pp. 9–15.
Appeared in Chinese in Chinese Cotton Jour. 2: 241–245. 1921, and in China Min. Agr. and Com. Jour. (pt. 3) 7 (11): 1. 1921.

GINS AND GINNING

Bennett, C. A. (480)
SEED-COTTON DRYING PROVES PROFITABLE; TWO TYPES OF DRIERS USED. Yearbook 1932: 433–435, illus. 1932.
Includes illustrations of the vertical seed-cotton drier developed by the Bureau of Agricultural Engineering, United States Department of Agriculture.

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THE VERTICAL SEED-COTTON DRIER. Misc. Pub. 149, 8 pp., illus. 1932.

Brown, H. H., and Roethe, H. E. (482)
COTTON-GIN FIRES FREQUENT; CHIEF CAUSE IS STATIC ELECTRICITY. Yearbook 1930: 192–195, illus. 1930.

Buchanan, H. F. (483)
THE DEVELOPMENT OF COOPERATIVE COTTON GINS IN GEORGIA. A PRELIMINARY REPORT. 24 pp. Bur. Agr. Econ., 1927. [Mimeographed.]

GERDES, F. L. (484)
COTTON QUALITY AFFECTED IN GINNING PROCESS BY MOISTURE IN SEED COTTON. Yearbook 1932: 431–433, illus. 1932.
The advantage of drying cotton artificially is discussed. Illustration shows effect on lint of drying the seed cotton before ginning.

HATHCOCK, J. S. (485)
COOPERATIVE COTTON GINS AS LOCAL UNITS OF MARKETING ASSOCIATIONS. Yearbook 1927: 188–189. 1928.

——— (486)
DEVELOPMENT OF COOPERATIVE COTTON GINS IN NORTHWEST TEXAS. A PRELIMINARY REPORT. 30 pp. Bur. Agr. Econ., 1927. [Mimeographed.]

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POSSIBLE SERVICES OF COOPERATIVE COTTON GINS * * * ADDRESS BEFORE THE SCHOOL OF COOPERATIVE MARKETING, COLLEGE STATION, TEXAS, MARCH 1, 1928. 13 pp. Bur. Agr. Econ. [1928] [Mimeographed.]

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PRACTICES AND COSTS OF COTTON-GIN OPERATION IN A SELECTED SECTION OF NORTH CAROLINA, 1924–25. A PRELIMINARY REPORT. 21 pp. Bur. Agr. Econ., 1927. [Mimeographed.]

——— (489)
PRACTICES AND COSTS OF COTTON-GIN OPERATION IN NORTH-CENTRAL TEXAS, 1924–25. Tech. Bull. 13, 60 pp., illus. 1927.
Appendix D, Texas laws relating to ginning, pp. 55–59.

MELOY, G. S. (490)
COTTON GINNING. Farmers' Bull. 1465, 29 pp., illus. 1925.

ROETHE, H. E. (491)
FIRES IN COTTON GINS AND HOW TO PREVENT THEM. Circ. 76, 8 pp., illus. 1929.
Revises and supersedes Department Circular 28, Cotton Gin Fires Caused by Static Electricity, by H. H. Brown, 1920, and Department Circular 271, Grounding Cotton Gins to Prevent Fires, by H. E. Roethe, 1923.
A wiring system for grounding gins is described.

SAUNDERS, D. A., and CARDON, P. V. (492)
CUSTOM GINNING AS A FACTOR IN COTTONSEED DETERIORATION. Dept. Bull. 288, 8 pp., illus. 1915.
Supplemented by Department Circular 205, Cottonseed Mixing Increased by Modern Gin Equipment, by W. W. Ballard and C. B. Doyle. 1922. (See item 808.)

SWARTHOUT, A. V., and BEXELL, J. A. (493)
A SYSTEM OF ACCOUNTING FOR COTTON GINNERIES. Dept. Bull. 985, 42 pp., illus. 1921.

TAYLOR, FRED, GRIFFITH, D. C., and ATKINSON, C. E. (494)
COTTON GINNING INFORMATION FOR FARMERS. Farmers' Bull. 764, 10 pp., illus. 1916.
Discusses mechanical processes of ginning by saw gins. Written with the purpose of pointing out to farmers the importance of keeping seed pure and eliminating improper preparation of cotton for the market.

TOWNSEND, J. S. (495)
GINNING PIMA COTTON IN ARIZONA. Dept. Bull. 1319, 12 pp., illus. 1925.
Describes operation of the roller gin, emphazing "the treatment which determines the mechanical condition and appearance of the cotton in the bales after the actual ginning is accomplished." Suggests improvements in methods.

UNITED STATES DEPARTMENT OF AGRICULTURE. (496)
AGRICULTURAL PATENTS OF THE YEAR. Dept. Agr. Rpt. 1869: 315–334, illus. 1870.
Cotton gins, pp. 330–331.

WEBB, R. W. (497)
PROBLEMS AND RESEARCH METHODS IN COTTON GINNING. A PRELIMINARY REPORT. 13 pp., illus. Bur. Agr. Econ. 1929. [Mimeographed.]
The material presented in this paper was given in substance before the Alabama ginners' convention at Montgomery, Ala., February 26, 1929.

MARKETING

BERCAW, L. O., and COLVIN, E. M., compilers. (498)
BIBLIOGRAPHY ON THE MARKETING OF AGRICULTURAL PRODUCTS. (Supplementary to Miscellaneous Circular 35.) Misc. Pub. 150, 351 pp. 1932.
"Designed to include the important references to printed publications in English on methods of marketing agricultural products and the principles on which methods of marketing should be based. It covers approximately the dates 1924–1931. No attempt has been made to cover the field of statistics" (p. 1). Cotton, pp. 48–53.

COX, A. B. (499)
EVOLUTION OF COTTON MARKETING. A SPECIAL REPORT. 21 pp. Bur. Agr. Econ. 1925. [Mimeographed.]

DAY, E. L., JACOBS, KATHARINE, and OLCOTT, M. T., compilers. (500)
BIBLIOGRAPHY ON THE MARKETING OF AGRICULTURAL PRODUCTS. Misc. Circ. 35, 56 pp. 1924.
Revised and enlarged from Bibliographical Contributions 7, Library, United States Department of Agriculture. [Mimeographed.]
Part III, Cotton, pp. 14–16.
Supplemented by Miscellaneous Publication 150, Bibliography on the Marketing of Agricultural Products (see item 498).

EDWARDS, E. E. (501)
HISTORICAL BACKGROUND OF THE PRESENT SITUATION IN SOUTHERN AGRICULTURE. 13 pp. Bur. Agr. Econ. [1930] [Mimeographed.]
References to literature cited, pp. 11–13.
Address, third annual meeting, Southeastern Economics Association, Atlanta, Ga., November 14–15, 1930.
"A history of the cotton system, broadly considered."

GRIFFITH, M. E., compiler. (502)
SELECTED LIST OF PUBLICATIONS ON THE MARKETING OF FARM PRODUCTS. 9 pts. Bur. Markets, 1918. [Mimeographed.]
Part 2. Cotton and cotton seed. 9 pp. Includes references on cotton, cottonseed, and storage and transportation.
Supplement. 2 pp., 1919.

MYERS, LAWRENCE, HOWELL, L. D., and THIBODEAUX, B. H. (503)
AMERICAN COTTON HOLDS GROUND DESPITE GROWTH OF FOREIGN COMPETITION. Yearbook 1933: 97–107, illus. 1933.
Pre-war and post-war production and consumption; quality of American cotton; utilization; transportation; storage; market organization; and the cotton farm situation.

UNITED STATES DEPARTMENT OF AGRICULTURE. (504)
COTTON EXCHANGES. Yearbook 1899: 758–759, 1900; Yearbook 1900: 753, 1901; Yearbook 1901: 696–697, 1902; Yearbook 1902: 757, 1903.
Tables listing city and State, name of organization, and name of secretary of cotton exchanges.

——— BUREAU OF AGRICULTURAL ECONOMICS. (505)
FEATURES OF THE WORK OF THE U.S. DEPARTMENT OF AGRICULTURE IN IMPROVING COTTON MARKETING CONDITIONS IN THE UNITED STATES. 33 pp. [1922] [Mimeographed.]
Describes the details of the cotton projects of the Bureau of Agricultural Economics as follows: The official standards for grade; regulation of the future exchanges; the quotation service; and demonstrations to farmers of standards and grading.

——— BUREAU OF AGRICULTURAL ECONOMICS. DIVISION OF COTTON MARKETING. (506)
COTTON NEWS SUMMARY. October 9, 1929—date, daily. [Mimeographed.]
Prepared for the use of the Division of Cotton Marketing, by Mildred C. Benton. Not for general distribution.

——— COTTON COUNCIL. (507)
THE COTTON MARKETING PROBLEM. 2 pp. 1922. [Mimeographed.]
"This statement was prepared by a special committee and approved by the Cotton Council of the Department of Agriculture."
Summary of the work of the Department of Agriculture in connection with cotton marketing.

UNITED STATES DEPARTMENT OF AGRICULTURE. OFFICE OF FARM MANAGEMENT. (508)

ATLAS OF AMERICAN AGRICULTURE [ADVANCE SHEETS, 4] PART V. THE CROPS. SECTION A. COTTON. By O. C. Stine and O. E. Baker. 28 pp., illus. 1918.

"Prepared under the supervision of O. E. Baker."

Principal commercial types. Geography of production. Economics and methods of production. History of production. Marketing and distribution. A selected bibliography of sources, p. 4. Illustrated by maps, charts, etc.

UNITED STATES PATENT OFFICE. (509)

COTTON PRODUCTION, COMMERCE, AND MANUFACTURE IN VARIOUS COUNTRIES OF THE GLOBE. U.S. Commr. Patents Rpt. 1856 (Agr.): 255–305. 1857.

Replies to a questionnaire relating to cotton "issued from the Patent Office on the 29th of February, 1856, and forwarded through the Department of State to our Diplomatic and Commercial Agents, Missionaries, Officers of the Navy, and other Public Functionaries, residing and travelling in the principal countries of the globe."

YOUNGBLOOD, BONNEY. (510)

COTTON CULTURE AND MARKETING IN THE UNITED STATES. ADDRESS DELIVERED BEFORE THE INSTITUTE OF POLITICS, WILLIAMS COLLEGE, WILLIAMSTOWN, MASSACHUSETTS, AUGUST 17, 1927. 9 pp. Bur. Agr. Econ. [1927] [Mimeographed.]

DEMAND AND COMPETITION

BROWNE, D. J. (511)

THE COTTON MANUFACTURES OF THE UNITED STATES. U.S. Commr. Patents Rpt. 1857 (Agr.): 305–318, illus. 1858.

Tables "show the amount and valuation of cotton consumed in the United States during the fiscal year ending June 30, 1857, and the character, quantity, and valuations of the goods manufactured therefrom, as far as returns have been made."

CLAIBORNE, JOHN. (512)

CONSUMPTION OF COTTON IN EUROPE. U.S. Commr. Patents Rpt. 1857 (Agr.): 319–414, illus. 1858.

DEWEY, L. H. (513)

ENGLISH ARTIFICIAL COTTON. 2 pp. Bur. Plant Indus., 1929. [Mimeographed.]

"Efforts to learn something definite about the identity" of "English artificial cotton", press reports of which appeared in newspapers of England and the United States beginning in November 1928, proved unavailing. The conclusion is reached that "notwithstanding the many positive statements that have been published, there is no definite information available indicating that either a promising new fiber or fiber-producing plant actually exists. Unless and until something more definite and tangible for examination and testing is produced, the so-called English artificial cotton cannot affect the textile industry and is unworthy of serious attention."

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HEMP FIBER LOSING GROUND, DESPITE ITS VALUABLE QUALITIES. Yearbook 1931: 285–287, illus. 1931.

"Cotton, which is adapted to a wider range of uses than other vegetable fibers, has replaced hemp for many purposes, and in most cases advantageously, for it can be spun more easily and with less waste, making smoother and more uniform yarns."

FETROW, W. W. (515)

COTTON EXPORTS OF UNITED STATES REFLECT CONTINUOUSLY SHIFTING WORLD MARKET. Yearbook 1931: 164–167, illus. 1931.

Charts and tables relating to consumption illustrate the discussion. Percentage distribution of American cotton, specified countries, average annual 1824–25 to 1828–29 and 1924–25 to 1928–29, fig. 31 (p. 165).

HITCHCOCK, F. H. (516)

FOREIGN MARKETS FOR AMERICAN AGRICULTURAL PRODUCTS. TESTIMONY OF FRANK H. HITCHCOCK, CHIEF OF THE SECTION OF FOREIGN MARKETS, BEFORE THE INDUSTRIAL COMMISSION. Dept. Rpt. 67, 53 pp. 1901.

Testimony before the United States Industrial Commission, June 13 and 15, 1900.

Some facts about cotton and cottonseed-oil exports are included.

JANNEY, S. M. (517)
VIRGINIA: HER PAST, PRESENT, AND FUTURE. Dept. Agr. Rpt. 1864: 17–42, illus. 1865.
Statement of cotton manufactures of Virginia, according to the census of 1860, table (p. 35).

M'KAY, [C. F.] (518)
THE COTTON TRADE, FROM 1825 TO 1850. U.S. Commr. Patents Rpt. 1850 (Agr.): 506–516, illus. 1851.

MICHAEL, L. G. (519)
AGRICULTURAL SURVEY OF EUROPE: FRANCE. Tech. Bull. 37, 184 pp., illus. 1928.
Literature cited, pp. 179–184.
Cotton, pp. 103–104. "Cotton is not produced on a commercial scale but data on the cotton trade are given in Tables 90, 91, and 92 as indicating the recovery of this branch of the textile industry in contradistinction to the decline in flax spinning."

NYHUS, P. O. (520)
CHINA'S DEMAND LARGE FOR SOME UNITED STATES PRODUCTS, DESPITE LOW INCOME. Yearbook 1932: 129–134, illus. 1932.
Cotton, pp. 130–131. "In recent years cotton has taken the leading place among these products." The cotton-spinning industry of China is described.

STINE, O. C. (521)
FOREIGN TRADE IN FARM PRODUCTS IS ABOVE PRE-WAR LEVEL. Yearbook 1930: 273–275. 1930.
Exports of cotton to China and Japan are included in discussion.

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WHAT AGRICULTURAL PRODUCTS HAD WE BEST EXPORT? 24 pp. Bur. Agr. Econ. [1930] [Mimeographed.]
Address, twenty-first annual meeting, American Farm Economic Association, Cleveland, Ohio, December 31, 1930.
"What agricultural products had we best export? A short answer to the question is: We should export those agricultural products which, sold in foreign markets, will return more net profit than would substitute products sold on a domestic market basis." The writer states that "cotton is by far the most important export commodity of the United States", and discusses points favorable to its export, pp. 3–4. Table shows exports of cotton, including linters, from the United States by principal countries, average 1909–13 and 1925–29, annual, 1928–29, (p. 12).

UNITED STATES DEPARTMENT OF AGRICULTURE. FLAX AND HEMP COMMISSION. (523)
REPORT OF THE FLAX AND HEMP COMMISSION, APPOINTED UNDER ACT OF CONGRESS FEB. 25, 1863. 96 pp., illus. [1865.]
The commission, consisting of J. K. Moorhead, J. A. Warder, and Charles Jackson, was appointed "for investigations to test the practicability of cultivating and preparing flax or hemp as a substitute for cotton."
"After the most careful consideration of various modes of growing and treating flax to obtain the best results to the farmer, and an abundant supply to the manufacturer, we are of the opinion that the crop should be planted mainly for the seed, and incidentally for the fiber" (p. 51). Illustrations of the cotton fiber (pp. 71–72).

VOLIN, L. (524)
COTTON EXPORTS TO RUSSIA DECLINE AS ACREAGE AND OUTPUT THERE INCREASE. Yearbook 1932: 142–145. 1932.

WATKINS, J. L. (525)
THE FUTURE DEMAND FOR AMERICAN COTTON. Yearbook 1901: 193–206, illus. 1902.
In an attempt to determine the future world consumption of American cotton, the author discusses the competition of cotton with wool, linen, and silk, and appraises India, Russia, Brazil, Egypt, and Africa as competitive sources of supply. Tables give statistics for the world's commercial cotton crop, 1860–1901; and world consumption, 1860–1900.

WRIGHT, J. W., and CHEATHAM, R. J. (526)
COMPARATIVE ADVANTAGES OF JUTE AND COTTON BAGGINGS FOR AMERICAN COTTON BALES. A PRELIMINARY REPORT. 24 pp., illus. Bur. Agr. Econ., 1933. [Mimeographed.]

YOUNGBLOOD, BONNEY. (527)
ADJUSTING THE QUALITY OF THE COTTON CROP TO SPINNERS' REQUIREMENTS * * * ADDRESS DELIVERED BEFORE THE GENERAL SESSION OF THE ASSOCIATION OF SOUTHERN AGRICULTURAL WORKERS, AT MEMPHIS, TENNESSEE, FEBRUARY 1, 1928. 12 pp. Bur. Agr. Econ. [1928] [Mimeographed.]

——— KILLOUGH, H. B., and STRANG, P. M. (528)
DOMESTIC MILL CONSUMPTION OF AMERICAN COTTON BY GRADES AND STAPLES. A PRELIMINARY REPORT. Bur. Agr. Econ., Div. Cotton Marketing Util. Amer. Cotton Ser. 5, 17 pp. 1928. [Mimeographed.]

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THE QUALITY OF COTTON AND MARKET DEMAND * * * ADDRESS AT THE MEETING OF THE SOUTHERN AGRICULTURAL WORKERS, HOUSTON, TEXAS, FEBRUARY 7, 1929. 10 pp. Bur. Agr. Econ. [1929] [Mimeographed.]

MOVEMENT

ANDREWS, FRANK. (530)
CROP EXPORT MOVEMENT AND PORT FACILITIES ON THE ATLANTIC AND GULF COASTS. Bur. Statis. Bull. 38, 80 pp., illus. 1905.
Cotton, pp. 11–17. Discusses places of concentration, decline of exports from North Atlantic ports and compares ports for 1905. Tables are included.

——— (531)
FREIGHT COSTS AND MARKET VALUES. Yearbook 1906: 371–386. 1907.
Cotton, pp. 372–376. Includes discussion of railroad and ocean freight rates; estimated average costs of carrying cotton in the United States and to the United Kingdom during the year ended June 30, 1906 (p. 376).

WHITE, J. C., and GOULD, B. R. (532)
THE MOVEMENT OF THE 1924–25 COTTON CROP AND CHANGES IN FREIGHT RATES ON COTTON 1913–27. 12 pp. Bur. Agr. Econ. [1928.] [Mimeographed.]

SUPPLY

AGELASTO, A. M., FETROW, W. W., and FARRINGTON, C. C. (533)
SOME PHASES OF THE LONG-STAPLE COTTON SITUATION IN THE UNITED STATES. 47 pp., illus. Bur. Agr. Econ., 1932. [Mimeographed.]
"Long-staple cotton, or staple cotton, as used in this report, refers to cotton having a staple length of 1⅛ inches and longer. The supply of this cotton in the United States consists of both domestic and foreign growths. The domestic production consists of (1) that portion of the upland crop having a staple length of 1⅛ inches and longer, (2) American-Egyptian or Pima cotton, and (3) sea-island cotton. The principal foreign growths of staple cotton consumed in the United States are Egyptian and Peruvian." Tables (pp. 11–47)—Statistics of staple length, production, ginnings, consumption, imports, prices, premiums, etc., charts (figs. 1–17).

BECKER, J. A. (534)
REGIONAL SHIFTS LARGE IN MAJOR CROP ACREAGES DURING DECADE 1919–29. Yearbook 1932: 483–487, illus. 1932.
Cotton increase or decrease in acreage, map (p. 486). Higher levels prevail in western Texas, Oklahoma, and the Mississippi Delta; lower levels prevail in Georgia and South Carolina.

BRANNER, J. C. (535)
COTTON IN THE EMPIRE OF BRAZIL; THE ANTIQUITY, METHODS, AND EXTENT OF ITS CULTIVATION; TOGETHER WITH STATISTICS OF EXPORTATION AND HOME CONSUMPTION. Misc. Spec. Rpt. 8, 79 pp., illus. 1885.
"During the winter of 1883–84, Mr. J. C. Branner, assisted by Mr. A. Koebele, was sent to Brazil to collect certain entomological information and, incidentally, any facts relating to cotton and its culture. A preliminary account of the journey has been published in Bulletin No. 4 of the Division of Entomology, and the entomological observations have been, or will be, used elsewhere." (p. 5). The early uses of cotton, pp. 16–20. Replies to questionnaire regarding cotton cultivation in Brazil, pp. 53–77.

CALLANDER, W. F. (536)
REVIEW OF THE 1928 COTTON CROP. A RADIO TALK * * * MAY 17, 1929. 2 pp. Bur. Agr. Econ. [1929] [Mimeographed.]

COOK, O. F. (537)
COTTON FARMING IN THE SOUTHWEST. Bur. Plant Indus. Circ. 132: 9–18. 1913.
Possibility of extension of the cotton industry in the Southwestern States is attended by several obstacles, such as the presence of a temporary population and the fact that living and working methods there are not well adapted to the climate.

——— (538)
COTTON OF LONG STAPLE COULD BE PRODUCED IN MUCH GREATER QUANTITY. Yearbook 1930: 202–207, illus. 1930.
"Superior varieties of long-staple upland cotton are now available, as early and productive as varieties with less than an inch staple * * * All of the field operations—preparing, planting, and cultivating—are the same for growing inferior cotton as for producing good fiber."

——— (539)
COTTON PROBLEMS IN LOUISIANA. Bur. Plant Indus. Circ. 130: 3–14. 1913.
"Whether long-staple cotton can take the place of sugarcane on any of the Louisiana lands and how far such a substitution may be expected to go are questions of present interest, but even outside the sugar districts it is important to have more definite knowledge of the possibilities of improvement. The presence of the bollweevil introduces a new element of uncertainty and requires many readjustments that are not yet complete. New varieties and improved cultural methods have been developed in recent years by the Department of Agriculture and are likely to be useful in Louisiana, but they have still to be tested and adapted to the local conditions. There are problems of other kinds that remain to be solved. The selling of the cotton must be considered, as well as the raising of it. The substitution of short fiber is now a more serious menace to the long-staple industry than the bollweevil."

——— (540)
EXTENSION OF COTTON PRODUCTION IN CALIFORNIA. Dept. Bull. 533, 16 pp. 1917.
"Cotton was grown in California half a century ago, but the early attempts were made on a basis of direct competition with the South, which could not be maintained when normal conditions had been reestablished after the Civil War. The present possibilities of development of cotton culture in California lie in the direction of producing Egyptian or other special types of long-staple cotton."

——— (541)
FACTORS AFFECTING THE PRODUCTION OF LONG-STAPLE COTTON. Bur. Plant Indus. Circ. 123: 3–9. 1913.
"The production of long-staple cotton is one of the undeveloped agricultural resources of the United States and one that is capable of enormous expansion. But it is equally apparent that anything like a full development of these resources must be accompanied by extensive changes and readjustments in the commercial and industrial world."

——— and DOYLE, C. B. (542)
SEA-ISLAND AND MEADE COTTON IN THE SOUTHEASTERN STATES. Dept. Circ. 414, 20 pp., illus. 1927.
"Object of the present circular is to call attention to the facts that should be considered in any attempts that are made to produce sea-island cotton or other extra-length staples in the Atlantic coast districts of South Carolina, Georgia, and Florida." One-variety communities, pp. 6–9.

DOYLE, C. B. (543)
COTTON GROWERS ADVISED NOT TO TRY LARGE-SCALE PLANTING OF SEA-ISLAND. Yearbook 1932: 148–150, illus. 1932.
"At present, satisfactory market arrangements have not been worked out with manufacturers, and until more information is available, farmers are being advised not to plant sea-island on a large scale anywhere in the continental United States."

FETROW, W. W. (544)
STAPLE LENGTHS OF WORLD COTTON CROPS. A PRELIMINARY REPORT. 10 pp. Bur. Agr. Econ., 1930. [Mimeographed.]

FLINT, WILSON. (545)
TEXTILE FIBRES OF THE PACIFIC STATES. Dept. Agr. Rpt. 1864: 471–487. 1865.
Cotton growing in the Pacific States a failure from meteorological causes, pp. 473–475.

HITCHCOCK, F. H. (546)
EXPORTS OF COTTON FROM EGYPT. Sec. Foreign Markets Circ. 15, 7 pp., illus. 1897.
Reprinted from Cotton Culture in Egypt, by G. P. Foaden. Off. Expt. Stas. Bull. 42. 1897.

HOLMES, C. L. (547)
SHIFTS IN PRODUCTION AREAS IN THE UNITED STATES INDUCED BY CHANGES IN FARM PRICES AND FARM TECHNIQUE. 31 pp., illus. Bur. Agr. Econ. [1931] [Mimeographed.]
Address, Conference of Principal and Reviewing Appraisers of the Federal Farm Loan Bureau, Washington, March 16, 1931.
Shifts in areas of cotton production, pp. 12–17. Includes the following charts: Cotton picked, increase in acreage, 1919–24.—Cotton picked, decrease in acreage, 1919–24.—Cotton acreage in Texas, Georgia, and South Carolina 1890–1930. "The increase in cotton acreage between [1919] and 1924 was notable in Texas and Oklahoma and in the upper end of the Mississippi Delta. Some increase occurred in portions of the Coastal Plain. Decreases during the same 5 years were notable in Georgia and South Carolina, and a small decrease is indicated in the Delta near Memphis and southward."

KEARNEY, T. H. (548)
COTTON OF AMERICAN-EGYPTIAN VARIETY IN U.S. Yearbook 1926: 251–254, illus. 1927.
A general discussion of selection and marketing of American-Egyptian cotton. Production and estimated value to the growers of the 14 annual crops 1912–25, table 3 (p. 252).

KNAPP, S. A. (549)
COTTON, THE GREATEST OF CASH CROPS. Off. Sec. Circ. 32, 8 pp. 1910.
Address on the outlook for cotton production in bollweevil territory, delivered at Greenville, Miss., January 17, 1910.

LANHAM, W. B. (550)
COTTON DATA RECORD VARIATION IN STAPLE LENGTH, 1928–1931. Yearbook 1932: 140–142, illus. 1932.

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COTTON GRADE AND STAPLE ESTIMATES SHOW QUALITY TREND. Yearbook 1930: 195–197, illus. 1930.
A description of the work of the grade and staple estimates project of the United States Department of Agriculture. Distribution of cooperating gins is shown in figure 42 (p. 196). Supply of American upland cotton in the United States, by staple length, 1928–29, figure 43 (p. 197).

——— (552)
GEOGRAPHIC DISTRIBUTION OF STAPLE LENGTHS OF AMERICAN UPLAND COTTON—CROPS OF 1928, 1929, AND 1930. A PRELIMINARY REPORT. 9 pp., illus. Bur. Agr. Econ., 1932. [Mimeographed.]

——— HARPER, F. H., NELSON, F. E., and MCCOLLUM, J. L. (552a)
GRADE, STAPLE LENGTH, AND TENDERABILITY OF COTTON IN THE UNITED STATES, 1928–29 TO 1931–32. Statis. Bull. 40, 158 pp., illus. 1933.
Much of the information presented herein was released previously in preliminary reports, but this is the first publication issued by the United States Department of Agriculture in which detailed information on the subject is assembled for 4 consecutive years.

——— and MCCOLLUM, J. L. (553)
GRADE AND STAPLE OF ALABAMA COTTON—CROPS OF 1928 AND 1929. A PRELIMINARY REPORT. 14 pp., illus. Bur. Agr. Econ., 1931. [Mimeographed.]

——— and MCCOLLUM, J. L. (554)
GRADE AND STAPLE OF ARKANSAS COTTON—CROPS OF 1928 AND 1929. A PRELIMINARY REPORT. 15 pp., illus. Bur. Agr. Econ., 1931. [Mimeographed.]

LANHAM, W. B., and MCCOLLUM, J. L. (555)
GRADE AND STAPLE OF LOUISIANA COTTON—CROPS OF 1928 AND 1929. A PRELIMINARY REPORT. 14 pp., illus. Bur. Agr. Econ., 1931. [Mimeographed.]
——— and BETTS, R. E. (556)
GRADE AND STAPLE OF MISSISSIPPI COTTON—CROPS OF 1928 AND 1929. A PRELIMINARY REPORT. 19 pp., illus. Bur. Agr. Econ., 1931. [Mimeographed.]
——— and BETTS, R. E. (557)
GRADE AND STAPLE OF SOUTH CAROLINA COTTON—CROPS OF 1928 AND 1929. A PRELIMINARY REPORT. 15 pp., illus. Bur. Agr. Econ., 1931. [Mimeographed.]
——— and MCCOLLUM, J. L. (558)
GRADE AND STAPLE OF TENNESSEE COTTON—CROPS OF 1928, 1929, AND 1930. A PRELIMINARY REPORT. 13 pp., illus. Bur. Agr. Econ., 1931. [Mimeographed.]
——— (559)
PROGRESS AND PRACTICAL USE OF THE COOPERATIVE GRADE AND STAPLE WORK. 14 pp. Bur. Agr. Econ. [1933] [Mimeographed.]
Address delivered before the meeting of the Southern Agricultural Workers Association, New Orleans, La., February 1, 1933.
——— and BETTS, R. E. (560)
QUALITY OF COTTON PRODUCED IN NORTH CAROLINA CROPS OF 1928 AND 1929. A PRELIMINARY REPORT. 14 pp., illus. Bur. Agr. Econ., 1930. [Mimeographed.]
——— (561)
STAPLE LENGTH OF TEXAS COTTON CROPS OF 1928 AND 1929. A PRELIMINARY REPORT. 14 pp., illus. Bur. Agr. Econ., 1930. [Mimeographed.]
——— (562)
THE STAPLE OF OKLAHOMA COTTON 1928 SEASON, A PRELIMINARY REPORT. 12 pp., illus. Bur. Agr. Econ., 1930. [Mimeographed.]
MEADOWS, W. R. (563)
ECONOMIC CONDITIONS IN THE SEA ISLAND COTTON INDUSTRY. Dept. Bull. 146, 18 pp., illus. [1914]
Results of investigation made, during August and September 1913, of economic conditions in the sea-island cotton industry in Charleston, S.C., and nearby islands, in Georgia and Florida, and of the American mills spinning yarns from sea-island cotton. It was found that deterioration in quality, and competition with Sakellaridis were among factors causing decrease in consumption of sea-island. Statistics of crops, prices, grades, imports, consumption of sea-island cotton are given in appendix (pp. 16–18).
PRYOR, W. L. (564)
LENGTH OF COTTON LINT, CROPS 1916 AND 1917. Dept. Bull. 733, 8 pp., illus. 1918.
Length estimates by States and amount produced 1916–17 are given in tables. Discussion of distribution of varieties is included.
SCOFIELD, C. S. (565)
COTTON PRODUCTION IN THE IRRIGATED SOUTHWEST IN 1920. 32 pp. Bur. Plant Indus., 1920. [Mimeographed.]
A survey of the cotton industry in the southwestern part of the United States.
SPILLMAN, W. J. (566)
CHANGES IN SOUTHERN AGRICULTURE AND THE PROBLEMS ARISING THEREFROM. 7 pp., illus. Bur. Agr. Econ. [1928] [Mimeographed.]
Address before the Economics Section, Association of Southern Agricultural Workers, Memphis, Tenn., February 2, 1928.
"The principal change in the agriculture of the South since 1909 has consisted in a vast shift of cotton production westward and northward. This has given rise to a number of new problems and has placed more marked emphasis on a number of old problems * * * The principal problem dealt with in this paper is that of rehabilitating the agriculture of [the] three southeasternmost States" (South Carolina, Georgia, and Florida). The introduction of livestock enterprises as a substitute for cotton production is discussed. Charts: (1) Cotton area as percent of total crop area, 1909; (2) Cotton area as percent of total crop area, 1924.

SPILLMAN, W. J. (567)
CHANGES IN TYPE OF FARMING, 1919–1924. Yearbook 1926: 203–207, illus. 1927.
Changes in cotton acreage, p. 207. Cotton acreage decreased in all the States from South Carolina to Louisiana except Alabama, and increased in the Western States. "For the country as a whole there was an increase of 16.2 percent. These increases were the result of the high prices for cotton that prevailed during most the war years and for some years afterward. The increase appears to have gone too far, for at the present time the situation of the cotton grower is critical because of low prices."

STRANG, P. M. (568)
QUALITY OF THE COTTON SPUN IN THE UNITED STATES (YEAR ENDING JULY 31, 1928). A PRELIMINARY REPORT. Bur. Agr. Econ., Div. Cotton Marketing. Util. Amer. Cotton Ser. 8, 14 pp. 1929. [Mimeographed.]

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STAPLE LENGTH OF FOREIGN-GROWN COTTONS CONSUMED IN THE UNITED STATES, 1928–1931. A PRELIMINARY REPORT. Bur. Agr. Econ., Div. Cotton Marketing. Util. Amer. Cotton Ser. 12, 6 pp. 1932. [Mimeographed.]

UNITED STATES DEPARTMENT OF AGRICULTURE. BUREAU OF AGRICULTURAL ECONOMICS. (570)
THE AGRICULTURAL OUTLOOK 1924–1933. Misc. Circulars 23, 38, 65, 101, and Misc. Pubs. 19, 44, 73, 108, 144, 156. 1924–33.
Includes the Cotton outlook.

——— BUREAU OF AGRICULTURAL ECONOMICS. (571)
THE AGRICULTURAL OUTLOOK FOR THE SOUTHERN STATES, 1930–31; 1931–32. Misc. Pubs. 102 and 137. 1930, 1931.

——— BUREAU OF AGRICULTURAL ECONOMICS. (572)
SOME FACTS ABOUT THE COTTON OUTLOOK FOR 1932. Misc. Pub. 139, 8 pp., illus. 1932.
"The principal facts of the cotton situation have been summarized to aid southern farmers in planning their crop production for 1932." Charts show prices, 1911–30; supply, consumption, 1920–31; acreage, yield per acre, production, 1890–1931.

——— BUREAU OF AGRICULTURAL ECONOMICS. (573)
THE WORLD COTTON SITUATION WITH OUTLOOK FOR 1931–32 AND THE LONG-TIME OUTLOOK FOR SOUTHERN AGRICULTURE. Misc. Pub. 104, 76 pp., illus. 1930.

——— BUREAU OF AGRICULTURAL ECONOMICS. DIVISION OF COTTON MARKETING. (574)
THE LONG-STAPLE UPLAND COTTON SITUATION. A SUPPLEMENTAL STATEMENT TO THE COTTON OUTLOOK ISSUED IN NOVEMBER AT ATLANTA. 3 pp. [1932] [Mimeographed.]

——— BUREAU OF AGRICULTURAL ECONOMICS. CROP REPORTING BOARD. (575)
SPECIAL REPORT ON REVISED ESTIMATES OF UNITED STATES COTTON ACREAGE AND YIELD, 1866–1931. v. p. 1933. [Mimeographed].

——— BUREAU OF AGRICULTURAL ECONOMICS. DIVISION OF STATISTICAL AND HISTORICAL RESEARCH. (576)
THE WORLD CARRYOVER AND CONSUMPTION OF AMERICAN COTTON, OCTOBER 13, 1927. 10 pp., illus. [1927?] [Mimeographed.]
"In the preparation of the usual monthly survey of the cotton-price situation for September [1927] the Bureau of Agricultural Economics used the Bureau of the Census estimate of stocks of American cotton in the United States, the International Cotton Federation's estimate of foreign mill stocks, and the Commercial and Financial Chronicle's estimate of stocks in foreign ports and afloat, as an indication of the world's carryover of American cotton into the new season beginning August 1, 1927. These estimates indicate that the world's carryover of American cotton was about 7,800,000 bales. The publicatiton of this figure has given rise to many inquiries concerning sources used and reasons why this figure differs from that of the New Orleans Cotton Exchange." A table presents "the estimates used by the Bureau in comparison with the estimates of the New Orleans Cotton Exchange, with foreign cotton and linters deducted from each of the items insofar as it is possible to do so."

UNITED STATES DEPARTMENT OF AGRICULTURE. BUREAU OF PLANT INDUSTRY. COMMITTEE ON SOUTHWESTERN COTTON CULTURE (577)

PRODUCTION OF AMERICAN EGYPTIAN COTTON. Dept. Bull. 742, 30 pp. 1919.

Revision of Department Bulletin 332, Community Production of Egyptian Cotton in the United States, by the Committee on Southwestern Cotton Culture, 1916.

The committee on southwestern cotton culture was composed of C. S. Scofield, T. H. Kearney, C. J. Brand, O. F. Cook, and W. T. Swingle. Bibliography, pp. 28–29.

"The purposes of this bulletin are to tell how Egyptian-cotton production became established in the Southwest as a result of community action, to describe the present status of the industry, and to give the reasons for encouraging the growing of this type of cotton in the United States."

——— OFFICE OF THE SECRETARY. (578)

THE AGRICULTURAL SITUATION FOR 1918. A SERIES OF STATEMENTS PREPARED UNDER THE DIRECTION OF THE SECRETARY OF AGRICULTURE. PART V. COTTON. MAINTAINING THE SUPPLY OF COTTON. Off. Sec. Circ. 88, 34 pp., illus. 1918.

List of contents includes the following headings: Demand for cotton; How supply of long-staple cotton was reduced; Efforts to re-establish long staples; Future demand for long-staple cotton; Cooperative efforts bring results; Increase the production per acre; Choose best variety for local conditions; Increase through cultural practices; Relation of disease to cotton production; Insect enemies of cotton; Seed greatly increases value of crop; Cotton marketing. Products and uses of cotton seed, diagram (taken from Bur. Census Bull. 131), p. 19.

UNITED STATES PATENT OFFICE. (579)

COTTON. U.S. Commr. Patents Rpt. 1845: 755–804, illus. 1846.

Consists of articles reprinted from various periodicals and other sources. Includes the following: On the culture of cotton; Cotton manufacture in Austria, in India; Cultivation of cotton in India; Growth of cotton in India; Report of the Committee of the Barnwell Agricultural Society on the Culture of Cotton, signed by J. H. Hammond, chairman; Preparing Fine Cottons for Market, by Alexander McDonald; "Liverpool annual report" and "Manchester market—annual report."

WOOTEN, E. O. (580)

COTTON IN THE TEXAS PLAINS AREA. Yearbook 1926: 271–274. 1927.

Discusses the appearance of cotton as a crop in this region which was primarily considered a cattle range. The success of the crop is indicated by figures for receipts in Lubbock County, Tex., in 1924.

YOUNGBLOOD, BONNEY. (581)

COTTON QUALITY STUDIES SHOW OPPORTUNITIES TO ADJUST STAPLE PRODUCTION. Yearbook 1928: 240–241. 1929.

"Data obtained in Georgia and a Texas-Oklahoma area, compared with results of a study of American mill consumption, indicate that these areas produce too much cotton seven-eighths of an inch and under, and too little cotton fifteen-sixteenths of an inch and above, in length."

——— (582)

COTTON-SPINNING VALUE STUDIES SHOW NEED OF HIGHER QUALITIES. Yearbook 1927: 228–232. 1928.

A discussion of data from grade and staple reports of cotton produced in Georgia and in certain counties in Texas and Oklahoma, preceded by a short history of the official standards for grade and staple.

CROP ESTIMATING AND REPORTING

BECKER, J. A. (583)

COTTON CROP REPORTS OF THE UNITED STATES DEPARTMENT OF AGRICULTURE. 16 pp., illus. Bur. Agr. Econ. [1926] [Mimeographed.]

For Southwestern Political Science Association meeting, Dallas, Tex., April 2, 1926.

"An attempt to provide a full discussion of the methods used in making the estimates and forecasts of cotton production."

——— (584)

CROP REPORTING BOARD POLICY IN FORECASTING COTTON PRODUCTION FROM CONDITION. 6 pp. Bur. Agr. Econ. [1929] [Mimeographed.]

Prepared upon request for August 11, 1928, issue of United States Daily.

BECKER, J. A. (585)
CROP-YIELD FORECASTS DEMAND STUDY OF MANY COMPLEX RELATIONSHIPS. Yearbook 1928: 245–247. 1929.
Forecasts of the cotton crop by the United States Department of Agriculture are discussed as illustration of the crop-yield forecasting system.

CALLANDER, W. F., and CHILDS, V. C. (586)
METHODS USED BY CROP REPORTING BOARD IN ESTIMATING THE COTTON CROP. 8 pp. Bur. Agr. Econ. [1931] [Mimeographed.]

——— (587)
RECENT DEVELOPMENTS IN COTTON CROP ESTIMATING. 15 pp. Bur. Agr. Econ. [1928] [Mimeographed.]
An address given before the American Statistical Association, New York City, April 20, 1928.

CRAWFORD, J. C. (588)
METHOD OF ESTIMATING THE YIELD OF COTTON IN THE FIELD. Yearbook 1904: 625–626, illus. 1905.
Directions are given for using a table for "number of cotton bolls per plant of various classes required at certain distances to produce a bale per acre when cotton gins 33⅓ percent of lint."

SARLE, C. F. (589)
ADEQUACY AND RELIABILITY OF CROP-YIELD ESTIMATES. Tech. Bull. 311, 138 pp., illus. 1932.
Cotton, pp 75–80. Comparison of yield estimates of the Department of Agriculture and yields derived from Census data, cotton, pp. 122–126.

TAYLOR, H. C. (590)
THE GOVERNMENT COTTON REPORTS. 6 pp. Bur. Agr. Econ., 1923. [Mimeographed.]
Published in Commerce and Finance. September 12, 1923.
Discusses sources of information; reports issued; sources and methods of determining acreage; the monthly crop condition estimates and forecasts; construction and use of "pars"; the July and August forecasts, and intentions to plant.

UNITED STATES DEPARTMENT OF AGRICULTURE. (591)
REPORT OF ADVISORY COMMITTEE ON COTTON CROP REPORTS TO THE SECRETARY OF AGRICULTURE, DECEMBER 22, 1923. 6 pp. [1924] [Mimeographed.]

STATISTICS[1]

AGELASTO, A. M., DOYLE, C. B., MELOY, G. S., and STINE, O. C. (592)
THE COTTON SITUATION. Yearbook 1921: 323–406, illus. 1922.
Includes notes on world production; principal commercial types of cotton; shifts in production; acreage, yield and production; diversification of crops; pests and diseases; cost of production; production credit, handling and marketing; consumption 1896–97 to 1920–21; summary of the situation and outlook.
Statistical charts and tables are contained in the discussion. "Soil regions of the cotton belt", by H. H. Bennett, map (p. 339).

[1] Statistics of cotton, cottonseed, and cottonseed products appear regularly in the Yearbook of Agriculture. For example, see the following:
U. S. DEPARTMENT OF AGRICULTURE. BUREAU OF AGRICULTURAL ECONOMICS. STATISTICAL COMMITTEE.
AGRICULTURAL STATISTICS. Yearbook 1933: 399–776, illus. 1933.
Chairman of the Statistical Committee, J. A. Becker.
Statistics of cotton, sugar, and tobacco, pp. 472–507. Tables for cotton acreage, production, value, exports, etc., United States, 1890–1932; acreage and production in specified countries, 1925–26 to 1932–33; world production of lint, 1909–10 to 1932–33; consumption by domestic mills, etc. Includes also statistics on production, prices, trade, etc., of cottonseed, cottonseed oil, and cottonseed meal. "For current statistics to supplement Yearbook statistics, the following sources should be used: (1) Crops and Markets—a monthly publication of the department carrying the latest current statistics on agriculture in the United States; (2) Foreign Crops and Markets—issued weekly by the Bureau of Agricultural Economics and devoted to current world statistics of crops, livestock and markets"; (3) World Cotton Prospects—published monthly by the Bureau of Agricultural Economics; (4) The Agricultural Situation—issued monthly; "(5) market news reports of the Bureau of Agricultural Economics—issued daily, weekly, monthly, quarterly, or at irregular intervals, at Washington and at the principal markets"; (6) Cotton Grade and Staple Reports—issued by the Division of Cotton Marketing, Bureau of Agricultural Economics.

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ANDREWS, FRANK, compiler. (593)
HANDBOOK OF FOREIGN AGRICULTURAL STATISTICS. Dept. Bull. 987, 69 pp., illus. 1921.
Tables arranged alphabetically by countries. Includes statistics for cotton imports and exports, 1910–20. United States equivalents of the principal weights and measures used in foreign agricultural statistics, pp. 68–69.

BAKER, O. E. (594)
AGRICULTURAL MAPS. Yearbook 1928: 640–665, illus. 1929.
Cotton, p. 4. Acreage and production, 1924.

——— (595)
A GRAPHIC SUMMARY OF AMERICAN AGRICULTURE BASED LARGELY ON THE CENSUS. Misc. Pub. 105, 228 pp., illus. 1931.
"Revision and enlargement of A Graphic Summary of American Agriculture contained in the 1915 Yearbook of the Department of Agriculture which was also issued as Yearbook Separate 681, and of a second contribution having the same title in the 1921 Yearbook, which was also issued as Yearbook Separate 878."
Cotton, pp. 30–35. Maps. Comparison of cotton with other crops in importance; acreage increases and decreases; changes in production and yield; number of farmers growing cotton, 1924. Farmers' associations handling cotton, 1929 (p. 144).

DODGE, J. R. (596)
AGRICULTURAL GRAPHICS. A REPORT OF EXHIBITS ILLUSTRATING AGRICULTURAL STATISTICS AT THE WORLD'S INDUSTRIAL AND COTTON EXPOSITION AT NEW ORLEANS, LA. Dept. Rpt. 40, 42 pp., illus. 1885.
Cotton, pp. 24–26. Progress of production; area. Production and export of cotton from 1841 to 1884, diagram xxiv; acreage, 1879, diagram xxv.

HYDE, JOHN. (597)
THE COTTON CROP OF 1896–97. Div. Statis. Circ. 8, 14 pp., illus. 1897.
Includes tables.

KNAPP, S. A. (598)
RECENT FOREIGN EXPLORATIONS AS BEARING ON THE AGRICULTURAL DEVELOPMENT OF THE SOUTHERN STATES. Bur. Plant Indus. Bull. 35, 44 pp., illus. 1903.
Report of visit to rice-producing countries. Statistics for cotton are given in table 1. Area (in acres) under crop of principal products in each province of British India, 1897–1900, p. 31.

MYERS, LAWRENCE, and COOPER, M. R. (599)
COTTON STATISTICS AND RELATED DATA FOR AGRICULTURAL WORKERS. 108 pp., illus. Bur. Agr. Econ., 1932. [Mimeographed.]
Supplement no. 1, a revision of pages 28, 29, and 30, appeared in World Cotton Prospects C–92, Sup., May 31, 1933.

ROBINSON, H. A. (600)
ACREAGE, PRODUCTION, AND VALUE OF PRINCIPAL FARM CROPS IN THE UNITED STATES, 1866 TO 1895, WITH OTHER DATA AS TO COTTON AND WOOL. Div. Statis. Circ. 1, 8 pp., illus. 1896.

——— (601)
THE COTTON CROP OF 1896. Div. Statis. Circ. 7, 4 pp., illus. 1897.
Preliminary report upon crop of 1896–97 is included.

UNITED STATES DEPARTMENT OF AGRICULTURE. BUREAU OF AGRICULTURAL ECONOMICS. (602)
FARM VALUE, GROSS INCOME, AND CASH INCOME FROM FARM PRODUCTION. . . A PRELIMINARY REPORT. Pts. 1–3, 5, illus. 1930–33. [Mimeographed.]
Statistics for the cotton crop are included.

——— BUREAU OF AGRICULTURAL ECONOMICS. DIVISION OF CROP AND LIVESTOCK ESTIMATES (603)
GROSS INCOME FROM FARM PRODUCTION, 1929–1931. SUMMARY OF THE INCOME ESTIMATES. 5 pp., illus. 1932. [Mimeographed.]
Table includes figures for income from cotton lint and cottonseed.

——— BUREAU OF AGRICULTURAL ECONOMICS. DIVISION OF INFORMATION. (604)
SOURCES OF FACTS ABOUT COTTON PRODUCTION, MARKETING AND OTHER ECONOMIC STATISTICS FROM FEDERAL SOURCES. 12 pp. 1926. [Mimeographed]

UNITED STATES DEPARTMENT OF AGRICULTURE. BUREAU OF AGRICULTURAL ECONOMICS. DIVISION OF STATISTICAL AND HISTORICAL RESEARCH (605)
COTTON FACTS. 28 pp., illus. 1930. [Mimeographed.]
Supersedes Facts about Cotton 1930 Outlook, February 1930. Illustrated by diagrams.

——— BUREAU OF CROP ESTIMATES. (606)
STATISTICAL DATA COMPILED AND PUBLISHED BY THE BUREAU OF CROP ESTIMATES 1863–1920. PART I. PUBLICATIONS OF THE BUREAU OF CROP ESTIMATES. PART II. SUBJECTS INCLUDED IN THE REPORTS AND RECORDS OF THE BUREAU OF CROP ESTIMATES. Dept. Circ. 150, 64 pp. 1921.
Cotton, pp. 27–29. Cottonseed, pp. 29–30.

——— BUREAU OF STATISTICS. (607)
COTTON CROP OF THE UNITED STATES, 1790–1911. Bur. Statis. Circ. 32, 9 pp., illus. 1912.
Compiled under the direction of G. K. Holmes.

——— BUREAU OF STATISTICS. DIVISION OF FOREIGN MARKETS. (608)
BULLETINS 1–37. 1895–1903.
Statistics of cotton and other commodities are contained in a number of these bulletins, which include material regarding world markets for American products; distribution of agricultural exports of the United States, etc.

——— BUREAU OF STATISTICS. DIVISION OF FOREIGN MARKETS. (609)
CIRCULARS 1–26. 1895–1903.
Contain information regarding imports, exports, foreign trade, etc. Statistics of the cotton trade are included in most of these circulars.

——— DIVISION OF STATISTICS. (610)
PRODUCTION AND DISTRIBUTION OF THE PRINCIPAL AGRICULTURAL PRODUCTS OF THE WORLD. COMPILED FROM OFFICIAL SOURCES. Div. Statis. Rpt. (misc. ser.) 5, 205 pp., illus. 1893.
"The tables presented in this report may be grouped under three heads: (1) A general presentation of the production, imports and exports, of the various countries for which data are available of the products considered in the report; (2) a summary, so far as such a summarization is possible, of the net supply of each product available in the various countries; (3) a detailed statement of the production, imports, and exports of each product, for a period of years, for each country separately" Cotton, pp. 33–36. "In the absence of official data it has been thought best to present a commercial estimate of the world's crop, and the careful compilation of Mr. Thomas Ellison, of Liverpool, has been selected."

WATKINS, J. L (611)
THE COMMERCIAL COTTON CROP OF 1903–4. Bur. Statis. Bull. 34, 101 pp., illus. 1905.

——— (612)
THE COMMERCIAL COTTON CROPS OF 1900–1901, 1901–1902, AND 1902–1903. Bur. Statis. Bull. 28, 83 pp., illus. 1904.
Tables give statistics of crops by States; shipments from railroad stations; progress of cotton spinning in the South; consumption at principal mill points; sea-island crops; prices and value of the crops; course of prices; cost of picking; exports and imports; world's spindles and consumption; acreage and crops since 1897; industry in Brazil; imports into Great Britain. 1895 to 1902; world's cotton crop, 1865–1902.

——— (613)
CONSUMPTION OF COTTON IN THE COTTON STATES. Yearbook 1903: 463–478, illus. 1904.
The history of southern cotton manufacturing from 1787 through 1903. Includes pictures of early mills. Tables for consumption and production, 1850–1903, in South Carolina, North Carolina, Georgia, Alabama, Tennessee, Virginia, and in the Southern States as a group.

——— (614)
THE COTTON CROP OF 1898–99. Div. Statis. Bull. (misc. ser.) 17, 32 pp., illus. 1900.

——— (615)
THE COTTON CROP OF 1895. Div. Statis Circ. 4, 14 pp., illus. 1896.

WATKINS, J. L. (616)
THE COTTON CROP OF 1899–1900. Div. Statis. Bull. (misc. ser.) 19, 46 pp., illus. 1901.

——— (617)
THE COTTON CROP OF 1897–98. Div. Statis. Circ. 9, 16 pp., illus. 1898.

——— (618)
PRODUCTION AND PRICE OF COTTON FOR ONE HUNDRED YEARS. Div. Statis. Bull. (misc. ser.) 9, 20 pp., illus. 1895.

Studies "the causes of the great fluctuations which sometimes occur in the prices of this commodity—how far prices have been governed by the law of supply and demand, and how far affected by artificial causes.

"With this view the following tables have been prepared, showing the supply and consumption and surplus stocks of cotton in the United States, Great Britain, and Continental Europe, and its prices in the leading markets of the world. The period under consideration, for convenience, is divided decennially, and begins and ends with two of the most remarkable events in the history of cotton, namely, the introduction of Whitney's saw gin (the invention was completed in 1793 and patented in 1794) and the production of the largest crop the world has ever seen. The figures prior to 1795 are given merely to show the rapid increase in the production of cotton brought about by the invention of Whitney's saw gin.

"In the compilation of the tables the estimates and prices furnished by Levi Woodbury, Secretary of the Treasury in 1836, the Liverpool Cotton Association, Thomas Ellison, A. B. Shepperson, E. J. Donnell, B. F. Nourse, Ott-Trumpler, and Latham, Alexander & Co., have been used. Other well-known and trustworthy authorities have been consulted." A "summary of some of the most interesting events relating to the growth and consumption of cotton, and the most important facts affecting its prices" follows each table. The commercial instead of the crop year is used.

An abstract of this bulletin was issued under the title "Cotton and Currency," 3 pp. [1895] (not seen).

WEST, C. J., and FLOHR, L. B. (619)
MARKET STATISTICS. Dept. Bull. 982, 279 pp., illus. 1921.

Tables. Pt. VI. Cotton, pp. 268–273. Production in principal countries, 1913–20; exports and imports, 1909–20; monthly exports of cottonseed oil, 1910–20; prices of cotton and cottonseed.

PRICES

ADAMS, L. A. (620)
AN ANALYSIS OF THE DIFFERENCE BETWEEN THE RETAIL PRICE OF COTTON CLOTH AND THE PRICE OF COTTON. PRELIMINARY REPORT. 34 pp. Bur. Agr. Econ., 1923. [Mimeographed.]

BEAN, L. H. (621)
APPLICATIONS OF A SIMPLIFIED METHOD OF GRAPHIC CURVILINEAR CORRELATION. A PRELIMINARY REPORT. 20 pp., illus. Bur. Agr. Econ., 1929. [Mimeographed.]

Among typical cases used as examples of method of approach are the following: Case II, Relation of cotton prices and business conditions to the domestic mill consumption of cotton (pp. 4–5); case III, Cotton consumption (continued) (pp. 5–7); case VI, Effect of price on acreage of cotton harvested in the United States (pp. 9–10).

——— (622)
FARM PRICES AND INCOMES REFLECT BUSINESS AND FINANCIAL CONDITIONS. Yearbook 1932: 200–205, illus. 1932.

Cotton consumption and industrial production in the United States 1919–31, chart (fig. 52, p. 203).

——— (623)
SOME INTERRELATIONSHIPS BETWEEN THE SUPPLY, PRICE, AND CONSUMPTION OF COTTON. ADDRESS DELIVERED BEFORE THE AMERICAN STATISTICAL ASSOCIATION, NEW YORK CITY, FRIDAY, APRIL 20, 1928. 8 pp., illus. Bur. Agr. Econ. [1928.] [Mimeographed.]

Illustrated by charts.

Cox, A. B. (624)

COTTON PRICES AND MARKETS. Dept. Bull. 1444, 78 pp., illus. 1926.

"An understanding of the marketing of cotton involves a knowledge of the demand for cotton, the supply of it, the machinery developed to bring demand and supply into trading relations, and the historical development of these three market factors. This analysis of the fundamental factors involved in cotton price making and this description of the markets in which prices are made is a contribution to that understanding." Illustrated by charts.

Gist, F. W., and Pope, J. D. (625)

PREVAILING PRICES PAID TO FARMERS FOR COTTON EACH SATURDAY, BEGINNING WITH SEPTEMBER 19TH, AND CONTINUING THROUGH DECEMBER 12TH [1925] 9 TO 12 O'CLOCK, AS REPORTED BY COUNTY AGENTS. [8] pp., illus. Bur. Agr. Econ. [1925.] [Mimeographed.]

Tables.

Holmes, G. K. (626)

AGRICULTURAL PRODUCTION AND PRICES. Yearbook 1897: 577–606, illus. 1898.

Prices of cotton and wheat (pp. 594–595). Average prices of cotton per pound in New York and Liverpool, 1791 to 1896, by periods of years table (p. 594). Influences that depress prices (pp. 595–599). Includes discussion of transportation, cost of marketing, effect of inventions, results of use of fertilizers. Charges for marketing a bale of cotton, 1840 and 1897, table (p. 596).

Howell, L. D. (627)

COTTON PRICES TO GROWERS DO NOT REFLECT ACCURATELY VARIATIONS IN QUALITY. Yearbook 1931: 171–172, illus. 1931.

"Data on prices paid and on the classification of 107,247 bales sold during the season of 1928–29 in 143 local markets, representing as nearly as possible a cross section of the types of local markets in the United States, were collected and analyzed" in a study made by the United States Department of Agriculture. A summary of findings is discussed. Illustrated by charts of grade and staple length.

——— and Burgess, J. S., Jr. (628)

FARM PRICES OF COTTON IN RELATION TO ITS GRADE AND STAPLE LENGTH IN LOCAL MARKETS IN THE UNITED STATES SEASON 1928–29, 1929–30, AND 1930–31. A PRELIMINARY REPORT. 71 pp., illus. Bur. Agr. Econ., 1932 [Mimeographed.]

——— Burgess, J. S., Jr., and Neubauer, T. A. (629)

FARM PRICES OF COTTON RELATED TO ITS GRADE AND STAPLE LENGTH—MISSISSIPPI CROP—SEASON 1928–29. A PRELIMINARY REPORT. 46 pp., illus. Bur. Agr. Econ., 1932. [Mimeographed.]

——— (630)

FARM PRICES OF COTTON RELATED TO QUALITY—ARKANSAS CROP, SEASON 1928–29. A PRELIMINARY REPORT. 23 pp., illus. Bur. Agr. Econ., 1931. [Mimeographed.]

——— (631)

FARM PRICES OF COTTON RELATED TO QUALITY. OKLAHOMA CROP—SEASON 1928–29. A PRELIMINARY REPORT. 23 pp., illus. Bur. Agr. Econ., 1931. [Mimeographed.]

Myers, Lawrence. (632)

FERTILIZER CONSUMPTION IN COTTON AREA VARIES WITH RETURN FROM CROP. Yearbook 1928: 292–293, illus. 1929.

Charts show "the average effect of fertilizer prices at planting time, cotton prices during the fall and winter prior to planting time, and yield per acre and acreage of the previous year's cotton crop upon the annual consumption of fertilizers in the cotton States" (p. 293).

Sarle, C. F. (633)

RELIABILITY AND ADEQUACY OF FARM-PRICE DATA. Dept. Bull. 1480, 66 pp., illus. 1927.

"This bulletin is designed to meet the needs of those students and research workers in the field of agricultural economics who may have occasion to work with the farm-price data which are collected and published by the Department of Agriculture. It is intended primarily for those students who are familiar with technical, statistical terms. The data published by the United States Department of Agriculture are too often taken for granted by the research worker, largely because the

reliability and adequacy of the data have never been fully analyzed. Many students would like to know what is back of farm-price data—how and when collected, and their most obvious limitations before trying to use them in some important economic problem." Analysis of cotton and cottonseed prices, pp. 30–31. Farm prices of cotton and cottonseed: Selected illustrations of size of sample, measures of dispersion, and probable error, table 12 (p. 31).

SMITH, B. B. (634)

FACTORS AFFECTING THE PRICE OF COTTON. Tech. Bull. 50, 75 pp., illus. 1928. Literature cited, pp. 72–74.

"A study of factors influencing the yearly and monthly price variations over a period of 20 years * * * The first part * * * has been written in the nature of a general summary of results, followed by a detailed description of the methods used, the reasons for selecting certain data to represent factors of supply and demand, and the logic and assumptions underlying the study. To this latter section all readers are referred who are interested in the technic of price analysis." Tables and charts are included.

STINE, O. C. (635)

THE EFFECT OF THE BUSINESS DEPRESSION ON AGRICULTURE. ADDRESS, TWENTY-SECOND SEMI-ANNUAL MEETING, AMERICAN RAILWAY DEVELOPMENT ASSOCIATION, CHICAGO, DECEMBER 5, 1930. 4 pp., illus. Bur. Agr. Econ. [1930] [Mimeographed].

"Cotton prices have followed fairly closely the long-time swings in the general price level." Cotton consumption and industrial production in the United States, 1919–1930, fig. 5.

——— (636)

PROGRESS IN PRICE ANALYSIS AND AN APPRAISAL OF SUCCESS IN PRICE FORECASTING. ADDRESS BEFORE THE ANNUAL MEETING OF THE AMERICAN FARM ECONOMIC ASSOCIATION, CHICAGO, DECEMBER 28, 1928. 8 pp., illus. Bur. Agr. Econ. [1928] [Mimeographed].

The writer states: "Let me illustrate the possible significance to farmers of some improvement in their knowledge of the real value of a product and the probable course of prices through a marketing season. I will use cotton as an illustration." Charts, (1) Farm prices of cotton and index of retail prices of commodities farmers buy. 1910–30.—(2) Cotton: Farm marketings and farm prices, 1926–27, 1927–28.

TAYLOR, FRED. (637)

RELATION BETWEEN PRIMARY MARKET PRICES AND QUALITIES OF COTTON. Dept. Bull. 457, 15 pp., illus. 1916.

Survey made in 1912–13 of Oklahoma and in 1913–14 of the remainder of the Cotton Belt. The conclusion is drawn from figures given that "practically no premium is paid for the grades above middling." Tables are included.

UNITED STATES DEPARTMENT OF AGRICULTURE. BUREAU OF AGRICULTURAL ECONOMICS. (638)

DISCUSSION OF PRICE FORECASTING AT A CONFERENCE WITH STATE REPRESENTATIVES. ANNUAL OUTLOOK MEETING OF THE BUREAU OF AGRICULTURAL ECONOMICS, JANUARY 26, 1928. 14 pp., illus. [1928] [Mimeographed].

Price forecasting. Abstract of discussion by L. H. Bean, pp. 10–14. Cotton included. Contains charts as follows: Actual and estimated yearly average prices of middling spot cotton at New Orleans crop years, August–July 1920–21 to date [1927–28]—Middling spot cotton price, New Orleans, and price estimated from various factors. Monthly, June 1905 to date [1926] (years beginning in June)—Relation between average yearly price of cotton at New Orleans and world carry-over of American cotton at end of season, 1920–21 to 1926–27.—Prices of middling spot cotton at New Orleans in years of large crops. [1] Years of large crops followed by years of small crops. [2] Years of large crops followed by years of large crops.—Actual percentage changes in United States cotton acreage harvested and changes estimated from relationships to antecedent factors. 1902–28.—Relation between gross income from cotton and fertilizer expenditures in cotton States for the following crop. 1913–28.—United States yield of cotton and yield estimated from winter weather index 1919–24.

UNITED STATES DEPARTMENT OF AGRICULTURE. BUREAU OF AGRICULTURAL ECONOMICS (639)
INDEX NUMBERS OF FARM PRICES AND OTHER TABLES. 1925, 1927, 1928, 1931, 1932. [Mimeographed.]
Index numbers of cotton and cottonseed prices are included.

WARREN, G. F. (640)
PRICES OF FARM PRODUCTS IN THE UNITED STATES. Dept. Bull. 999, 72 pp., illus. 1921.
Purchasing power of cotton at December 1 prices [1882–1920], chart, p. 21. Farm price and purchasing power of cotton in the United States at December 1 prices [1876–1920] table 24 (p. 71).

WELLS, O. V. (641)
FARMERS' RESPONSE TO PRICE. A SELECTED BIBLIOGRAPHY. 26 pp. Bur. Agr. Econ., 1933. [Mimeographed.]
For references to cotton see the index.

MARKETING METHODS AND PRACTICES

BEVERIDGE, E. A. (642)
INVESTIGATIONS OF AMERICAN COTTON TARE. A PRELIMINARY REPORT. 17 pp., illus. Bur. Agr. Econ., 1925. [Mimeographed.]
Deals with the usual so-called "square" bale, unless the context indicates a gin-compressed bale. "Tare" is used in the usual trade sense of the bagging and ties themselves, that is, the material used for covering. Estimated annual savings in the major items affected by tare standardization, table (p. 5).

BRAND, C. J. (643)
IMPROVED METHODS OF HANDLING AND MARKETING COTTON. Yearbook 1912: 443–462, illus. 1913.

COOK, O. F. (644)
THE RELATION OF COTTON BUYING TO COTTON GROWING. Dept. Bull. 60, 21 pp. [1914.]
Deals with the long-staple cotton situation. "The present tendency to buy long-staple cotton at flat prices like short-staple cotton does not encourage greater care and discrimination on the part of the farmer, but encourages the opposite tendencies to carelessness, loss of uniformity of fiber and degeneration of varieties."

COX, A. B. (645)
LOCAL COTTON MARKETING IN TEXAS. A PRELIMINARY REPORT. 26 pp. Bur. Agr. Econ., 1927. [Mimeographed.]

——— (646)
MARKETING AMERICAN COTTON IN ENGLAND. Tech. Bull. 69, 88 pp., illus. 1928.
Written "to picture the marketing facilities and the marketing processes as they are related to America and Americans, rather than to go into an analysis of the more fundamental demand and supply factors which explain price" (p. 5).

——— (647)
MARKETING AMERICAN COTTON ON THE CONTINENT OF EUROPE. Tech. Bull. 78, 95 pp., illus. 1928.
Literature cited, pp. 94–95.
A description of marketing practices in Europe, centering around the larger markets in Germany, Belgium, Italy, Spain, and France.

——— (648)
SERVICES IN COTTON MARKETING. Dept. Bull. 1445, 40 pp., illus. 1926.
A survey of the following services: Preparation; standardization; classing; assembling and distributing; warehousing; inspection and regulatory work; financing; and furnishing information (regarding demand, supply, price, personnel of buyers and sellers, etc.). Agencies of market information and data supplied, table 7 (p. 34). Sources of cotton prices, the data, and the publication in which they appear, table 8 (p. 35).

CRAWFORD, G. L. (649)
POINT BUYING OF COTTON VERSUS BUYING ON QUALITY BASIS. 9 pp. Bur. Agr. Econ. [1930]. [Mimeographed.]
Address, Economic Section, meeting of Southern Agricultural Workers, Jackson, Miss., February 6, 1930.

CRESWELL, C. F. (650)
DISADVANTAGES OF SELLING COTTON IN THE SEED. Dept. Bull. 375, 19 pp., illus. 1916.
Reports an investigation conducted in Oklahoma during the season of 1913–14. It is shown by tables of price variations that in most cases losses resulted from selling cotton in the seed.

——— (651)
LOSSES FROM SELLING COTTON IN THE SEED. Farmers' Bull. 775 (rev. ed.), 10 pp., illus. 1926.
Issued 1916; revised 1926 by G. S. Meloy.
"Based on personal interviews during May and June of 1916 with farmers, ginners, oil-mill men, and others in all the important sections where cotton is sold in the seed, and on a study of seed-cotton marketing made in Oklahoma during the 1913–14 season." For the latter study, see Department Bulletin 375, Disadvantages of Selling Cotton in the Seed, by C. F. Creswell. 1916. (See item 650.)

HOLT, W. I. (652)
STANDARDIZED COTTON TARE IN EGYPT. Circ. 47, 14 pp., illus. 1928.
"This study of the Egyptian methods of baling and marketing cotton is published in the hope that it will suggest practical methods for improving the American bale."
Principal among the advantages of the Egyptian bale are the following: "Uniformity of bale * * *; completeness of protection afforded the cotton by the covering; regularity of tare; lightness of tare; square heads, or ends, facilitating storage; and general neatness of the package" (p. 2). A discussion of the relation of Egyptian marketing methods and the Egyptian bale is included. "Tare" is used in this circular to mean "the collective weight of covering and bands put on bale."

MCCONNELL, O. J., and CAMP, W. R. (653)
A STUDY OF COTTON MARKET CONDITIONS IN NORTH CAROLINA WITH A VIEW TO THEIR IMPROVEMENT. Dept. Bull. 476, 19 pp., illus. 1917.
"This investigation was confined to the eastern part of the State during the season of 1914–15. and embraced all cotton-producing sections during the season of 1915–16." An attempt was made to ascertain the value to the farmer of his knowing the class of his cotton before selling it. It was found that classed cotton sold at a primary market increased the price paid for unclassed cotton in the same market about 50 cents per bale. Includes a discussion of related problems.

——— (654)
SUGGESTED IMPROVEMENTS IN METHODS OF SELLING COTTON BY FARMERS, BASED ON A COMPARISON OF COTTON PRODUCERS' AND CONSUMERS' PRICES. Dept. Circ. 56, 8 pp., illus. 1919.
"The average cotton mill in North Carolina paid about $11.50 per bale more than North Carolina farmers received for the same class of cotton during the period covered by the investigation" [1916–17 and 1917–18 seasons] (p. 6). After a comparison of cotton producers' and consumers' prices, suggestion is made of the following improvements in farmers' selling methods: (1) The production of such cotton as the mills need; (2) the erection of a compress and ample storage and shed space at some central point or points in the main producing area; (3) a disinterested classing service; (4) better ginning facilities; (5) the shipment of less damaged cotton to the mills; (6) cultivation of varieties that produce a better staple.

MARTIN, J. G., and WHITE, G. C. (655)
HANDLING AND MARKETING DURANGO COTTON IN THE IMPERIAL VALLEY. Dept. Bull. 458, 22 pp., illus. 1917.
Investigations made in 1915 in the Imperial Valley of California.

——— (656)
THE HANDLING AND MARKETING OF THE ARIZONA-EGYPTIAN COTTON OF THE SALT RIVER VALLEY. Dept. Bull. 311, 16 pp., illus. 1915
Classing the Arizona-Egyptian cotton, pp. 7–8; staples, pp. 9–10.

SCOFIELD, C. S. (657)
COTTON HEDGES AND STRADDLES. 16 pp. Bur. Plant Indus., 1914. [Mimeographed.]

SHERMAN, W. A., TAYLOR, FRED, and BRAND, C. J. (658)
STUDIES OF PRIMARY COTTON MARKET CONDITIONS IN OKLAHOMA. Dept. Bull. 36, 36 pp., illus. [1913]

A survey, begun in October 1912, of 103 towns in Oklahoma shows relation of grade and staple to prices paid in local markets, and irregularities in prices of identical cotton in the same markets on the same dates. Includes discussion of selling cotton in the seed and of marketing "bolly" and "gathered" cotton.

UNITED STATES DEPARTMENT OF AGRICULTURE. BUREAU OF AGRICULTURAL ECONOMICS. (659)
AVOIDABLE LOSSES IN COTTON HANDLING. STENOGRAPHIC TRANSCRIPT OF PROCEEDINGS OF CONFERENCE HELD FEBRUARY 24, 1925, AT WASHINGTON, D.C. 57 pp. [1925] [Mimeographed.]

The conference was attended by Government officials, representatives of cotton exchanges and associations, manufacturers, editors, and others.

WRIGHT, J. W., and CHEATHAM, R. J. (660)
AMERICAN COTTON-TARE PRACTICES AND PROBLEMS. A PRELIMINARY REPORT. 73 pp., illus. Bur. Agr. Econ., 1933. [Mimeographed.]

Appendix A. Abstract of State laws relating to cotton tare (pp. 58–61.)—Appendix B. Abstract of tare rules of cotton exchanges and trade associations (pp. 61–73.)

COMMERCIAL CLASSIFICATION

EARLE, D. E., and TAYLOR, FRED. (661)
CLASSIFICATION OF AMERICAN UPLAND COTTON. Farmers' Bull. 802, 28 pp., illus. 1917.

Revision of Farmers' Bulletin 591, The Classification and Grading of Cotton, by D. E. Earle and W. S. Dean. 1914.

FINCH, C. L. (662)
COTTON CLASSIFICATION SERVICE IS MAINTAINED UNDER STANDARDS ACT. Yearbook 1928: 233, illus. 1929.

A short description of the cotton classification service of the Division of Cotton Marketing, Bureau of Agricultural Economics.

PALMER, A. W. (663)
THE COMMERCIAL CLASSIFICATION OF AMERICAN COTTON, WITH REFERENCE TO THE STANDARDS FOR GRADE, COLOR, AND STAPLE. Dept. Circ. 278, 36 pp., illus. 1924.

UNITED STATES DEPARTMENT OF AGRICULTURE. BUREAU OF AGRICULTURAL ECONOMICS. DIVISION OF COTTON MARKETING. (664)
OFFICIAL CLASSIFICATION OF COTTON. SERVICE AVAILABLE UNDER COTTON STANDARDS ACT TO GROWERS, MERCHANTS, SPINNERS, AND OTHERS. 3 pp. [1931?] [Mimeographed.]

STORAGE

BRAND, C. J., and SHERMAN, W. A. (665)
BEHAVIOR OF SEED COTTON IN FARM STORAGE. Bur. Plant Indus. Circ. 123: 11–20, illus. 1913.

Reports of experiments at Bennettsville, S. C., during the picking season of 1912. Discusses temperature in unginned cotton stored under varying conditions; and moisture conditions in unginned cotton in farm storage. Results show "the perfect safety with which considerable bodies of mature seed cotton can be stored if care is taken to have the cotton free from exterior moisture when stored." The effect on seed germination of temperatures developed during storage: "The practical point to be observed is that cotton from which planting seed is to be saved must be so thoroughly dried out before bulking or must be spread out in such thin layers as to prevent any noticeable development of heat if the germination of the seed is not to be affected."

NEWTON, R. L., and WORKMAN, J. M. (666)
COTTON WAREHOUSING—BENEFITS OF AN ADEQUATE SYSTEM; WITH A DISCUSSION OF THE RECEIPT UNDER THE UNITED STATES WAREHOUSE ACT. Yearbook 1918: 399–432, illus. 1919.

"Graphic presentation of the fluctuations of New York spot price levels for middling upland cotton as related to the 'into-sight' movement and the heavy marketing period" fig. 1 (pp. 402–403.)

NEWTON, R. L., and HUMPHREY, J. R. (667)
A SYSTEM OF ACCOUNTS FOR COTTON WAREHOUSES. Dept. Bull. 520, 31 pp., illus. 1917.

NIXON, R. L. (668)
COTTON WAREHOUSE CONSTRUCTION. Dept. Bull. 277, 38 pp., illus. 1915.
Descriptions and diagrams of several types of standard warehouses.

——— (669)
COTTON WAREHOUSES: STORAGE FACILITIES NOW AVAILABLE IN THE SOUTH. Dept. Bull. 216, 26 pp., illus. [1915]
Results of warehouse survey of Georgia and North Carolina made early in 1914. Some data for other Southern States also included. Discusses present number and conditions of warehouses, insurance rates and importance of proper warehousing.

——— (670)
WEATHER DAMAGE TO COTTON. Dept. Bull. 1438, 15 pp., illus. 1926.
"The findings of the experiments here described should be useful in combating the prevalent belief, especially on the part of farmers, that the exposure of baled cotton to unfavorable weather does not reduce the value of the product. The data emphasize the desirability of storing cotton in proper warehouses immediately after ginning and point out the best method of storing cotton in the open when it is necessary to do so. "'Weather damage', as here used, means damage resulting to the cotton fibers on account of an excess of moisture."
Six tests were conducted at five representative points in the Cotton Belt as follows: (1) Little Rock, Ark., November 25, 1918, to June 7, 1919; (2) Raleigh, N.C., November 20, 1918, to June 9, 1919; (3) Dallas, Tex., December 23, 1919, to August 3, 1920; (4) Raleigh, N.C., January 15, 1920, to August 24, 1920; (5) Jefferson, Ga., January 10, 1920, to August 26, 1920; (6) Dunn, N.C., December 13, 1921, to July 31, 1922.

STEECE, H. M., compiler. (671)
ANNOTATED BIBLIOGRAPHY ON THE STORAGE OF COTTONSEED AND OF SEED COTTON. 13 pp. Ext. Serv. [1927]. [Mimeographed.]
Also in Agr. Jour. India, March 1929 issue, pp. 127–134.

WORKMAN, J. M. (672)
CONSTRUCTION AND FIRE PROTECTION OF COTTON WAREHOUSES. Dept. Bull. 801, 79 pp., illus. 1919.
Standard warehouse plans are given in an appendix.

COOPERATIVE MARKETING

CHRISTENSEN, C. L. (673)
BUSINESS SET-UP OF A COOPERATIVE MARKETING ASSOCIATION. Dept. Circ. 403, 14 pp. 1926.
The Staple Cotton Cooperative Association, pp. 6–7. Discussion is based on a business study and analysis made by the United States Department of Agriculture. (See item 684.)

ELSWORTH, R. H. (674)
AGRICULTURAL COOPERATIVE ASSOCIATIONS, MARKETING AND PURCHASING, 1925. Tech. Bull. 40, 98 pp., illus. 1928.
Cotton and cotton-products associations, pp. 33–36. "The 121 associations listed by the Department in 1925 included 15 large-scale associations engaged in marketing cotton, approximately 50 cooperative cotton gins, and about 50 small associations performing miscellaneous functions." Cotton marketed by centralized associations and value, 1921–26, table 12 (p. 34).

——— (675)
COOPERATIVE MARKETING AND PURCHASING, 1920–1930. Circ. 121, 121 pp., illus. 1930.
"The material now presented includes data based on a count of the active farmers' business associations in 1930, with estimates as to the membership in 1928 for each of the States in the various commodity groups and estimates on the same basis for the business transactions for the 1927–28 marketing season. This information will bring up to date the more important part of Technical Bulletin No. 40." (See item 674). Cooperative associations for handling cotton, pp. 12–15.

ELSWORTH, R. H. (676)
DEVELOPMENT AND PRESENT STATUS OF FARMERS' COOPERATIVE BUSINESS ORGANIZATIONS. Dept. Bull. 1302 (rev. ed.), 76 pp., illus. 1925.
Issued 1924; revised 1925.
State and regional cotton marketing associations, June 1924, table 56 (p. 63).

GARDNER, CHASTINA, compiler. (677)
COOPERATION IN AGRICULTURE. A SELECTED AND ANNOTATED READING LIST. WITH SPECIAL REFERENCE TO PURCHASING, MARKETING, AND CREDIT. INCLUDING ONLY WORKS PRINTED IN ENGLISH. Misc. Circ. 97, 76 pp. 1927.
Supersedes Miscellaneous Circular 11, Agricultural Cooperation: A Selected and Annotated List with Special Reference to Purchasing, Marketing, and Credit, by Chastina Gardner. 1923.

GATLIN, G. O. (678)
COOPERATIVE MARKETING OF COTTON. Dept. Bull. 1392, 48 pp., illus. 1926.
Background of the movement; contemporary organizations; American Cotton Growers' Exchange; principles and policies; methods and practices; costs and prices. State-wide and regional cooperative cotton-marketing associations, dates of incorporation, and number of members, table I (pp. 1–2).

HATHCOCK, J. S. (679)
COTTON COOPERATIVES LIBERALIZE CONTRACTS AND EXTEND SERVICES. Yearbook 1928: 237–238. 1929.
A list is given of economic services rendered advantageously to the grower by the cooperative associations.

——— (680)
SIGNIFICANCE OF RECENT CHANGES IN THE COOPERATIVE MARKETING OF COTTON. 11 pp. Bur. Agr. Econ. [1929] [Mimeographed.]
Address at cooperative-marketing school, Stillwater, Okla., February 20, 1929.

JESNESS, O. B., and KERR, W. H. (681)
COOPERATIVE PURCHASING AND MARKETING ORGANIZATIONS AMONG FARMERS IN THE UNITED STATES. Dept. Bull. 547, 82 pp., illus. 1917
History, present forms, statistics, and digest of laws of cooperative organizations. Cotton organizations, pp. 34–35. "Reports were received from 213 cotton associations distributed among 14 States. Over one-half of them are located in the States of Texas and Georgia, the former reporting 71 and the latter 44. Alabama reported 19, Arkansas 15, South Carolina 14, Oklahoma 13, Mississippi 11, and North Carolina 10; and the remainder are scattered over the cotton-producing States of the South. Practically all are cotton warehousing associations. Comparing the number of grain elevators and the number of cotton associations, it is evident that the cotton growers of the South are not nearly as well organized as the grain growers of the North Central States." Tables list type of organization, volume of business, and number of members of organizations reporting, by States and kinds of business (pp. 14–24).

JONES, J. W., and JESNESS, O. B. (682)
MEMBERSHIP RELATIONS OF COOPERATIVE ASSOCIATIONS (COTTON AND TOBACCO). Dept. Circ. 407, 28 pp., illus. 1927.

MANNY, T. B. (683)
FARMERS' EXPERIENCES AND OPINIONS AS FACTORS INFLUENCING THEIR COTTON-MARKETING METHODS. Circ. 144, 63 pp., illus. 1931.
One of several studies undertaken by the Bureau of Agricultural Economics during 1928–29 for the purpose of analyzing existing cotton marketing conditions. The objectives of this study may be briefly outlined as follows: To determine farmers' experiences in selling cotton through various methods during the period 1920–30; to find out the characteristics of members and nonmembers of cotton cooperative marketing associations; to find out what these farmers think as to what the associations have and have not accomplished; to ascertain possibilities of increasing membership in cotton cooperative-marketing associations. Data and conclusions are based on personal interviews which were held in 1928 with farmers in six counties in North Carolina and Georgia. "Only farmers who have control of marketing the cotton crops that they or their tenants grow" were interviewed. "It is suggested that the findings be accepted as tentative for the larger areas."

SWARTHOUT, A. V. (684)
FARMERS' COOPERATIVE BUSINESS STUDY. THE STAPLE COTTON COOPERATIVE ASSOCIATION. Dept. Circ. 397, 56 pp., illus. 1926.
"The purpose of the study was to cover thoroughly every feature of the association's operations during the 4 years of its existence [1921–25] and to bring out, if possible, the experiences which would be helpful to other cooperatives."

UNITED STATES DEPARTMENT OF AGRICULTURE. BUREAU OF AGRICULTURAL ECONOMICS. DIVISION OF COOPERATIVE MARKETING. (685)
FARMERS' BUSINESS ASSOCIATIONS. LIST PREPARED FROM REPORTS RECEIVED BY THE DIVISION OF COOPERATIVE MARKETING, BUREAU OF AGRICULTURAL ECONOMICS, UNITED STATES DEPARTMENT OF AGRICULTURE, WASHINGTON, D.C., JULY 1, 1929. [1929] [Mimeographed.]
Part 1. Cotton and cotton products (5 pp.)

FIBER QUALITY

GENERAL

ALLARD, H. A. (686)
THE FIBERS OF LONG-STAPLE UPLAND COTTONS. Bur. Plant Indus. Bull. 111: 13–15, illus. 1907.
The writer states that the apparently un-uniform longer fibers often found in upland cottons "are not longer fibers as they have been generally considered, but are caused by more or less curling and interweaving, which results in the pulling out of fibers from adjacent seeds" (p. 14).

CHANDLER, E. E. (687)
A NEW MECHANICAL METHOD FOR DETERMINING THE LENGTH OF COTTON FIBERS. A PRELIMINARY REPORT. 38 pp. Bur. Agr. Econ., 1926. [Mimeographed.]

——— (688)
A NEW METHOD FOR DETERMINING THE STRENGTH OF COTTON. A PRELIMINARY REPORT. 16 pp. Bur. Agr. Econ., 1926. [Mimeographed.]

DEWEY, L. H., and GOODLOE, MARIE. (689)
THE STRENGTH OF TEXTILE PLANT FIBERS. Bur. Plant Indus. Circ. 128: 17–21, illus. 1913.
Strength of cotton fibers, pp. 17–19; tensile strength of cotton fibers, by varieties, table I (p. 19); diameters of cotton fibers, table II (p. 19); American upland, sea-island, Egyptian (American grown); photograph of fiber tester used in Office of Fiber Investigations, fig. 1 (p. 18); strength of long fibers [bast and hard fibers] (pp. 19–21).

DODGE, C. R. (690)
A DESCRIPTIVE CATALOGUE OF USEFUL FIBER PLANTS OF THE WORLD, INCLUDING THE STRUCTURAL AND ECONOMIC CLASSIFICATIONS OF FIBERS. Off. Fiber Invest. Rpt. 9, 361 pp., illus. 1897.
Gossypium spp. Cotton, pp. 174–186. Common and native names in various counties; habitat and species; surface fiber; cultivation in various sections of the world; cotton industry of the United States, including cultivation, ginning, baling, manufacture; use of the bast fiber.

——— (691)
VEGETABLE FIBERS. Dept. Agr. Rpt. 1879: 498–611. 1880.
Gossypium herbaceum. Cotton, pp. 513–517. Origin, history, production; and description of samples in the museum of the Department of Agriculture.
Appendix III, list of patents for fiber machinery and processes (pp. 609–611). List of patents granted, 1875–79, "for inventions for obtaining and preparing fibrous substances other than cotton and wool, with name of inventor and date of issue."

HAWKINS, R. S., and SERVISS, G. H. (692)
DEVELOPMENT OF COTTON FIBERS IN THE PIMA AND ACALA VARIETIES. Jour. Agr. Research 40: 1017–1029, illus. 1930.
"The data included in the present publication relate to the life history of two types of cotton fibers developing in successive periods during the growing season of 1926." The plants were grown at the Salt River Valley Experiment Station.

HAWKINS, R. S., and SERVISS, G. H. (693)
METHODS OF ESTIMATING COTTON FIBER MATURITY. Jour. Agr. Research 43: 733–742. 1931.
The extent of fluffiness in the boll, and the color, plumpness, and maturity of a representative quantity of the delinted seed are indicative of the amount of immature fibers present.

KEARNEY, T. H. (694)
FIBER FROM DIFFERENT PICKINGS FROM EGYPTIAN COTTON. Bur. Plant Indus. Circ. 110: 37–39. 1913.
Investigations were made upon material collected in two pickings of Yuma cotton at Sacaton, Ariz., in fall of 1911. "The earliest ripening bolls (chiefly those near the base of the plant), which open while extremely high temperatures prevail, are likely to contain less abundant, shorter, weaker, coarser, and less uniform fiber than bolls which ripen later."

——— and HARRISON, G. J. (695)
LENGTH OF COTTON FIBERS FROM BOLLS AT DIFFERENT HEIGHTS OF THE PLANT. Jour. Agr. Research 28: 563–565, illus. 1924.
Investigations on Pima cotton grown under irrigation at the United States Field Station at Sacaton, Ariz. "The fiber in the bolls borne on fruiting branches at nodes 9 to 14, from which a large part of the first picking probably is derived, is decidedly shorter than the fiber produced higher on the plant."

——— and SCOFIELD, C. S. (696)
THE SALT CONTENT OF COTTON FIBER. Jour. Agr. Research 28: 293–295, illus. 1924.

PALMER, A. W. (697)
COTTON-FIBER RESEARCH POINTS WAY TO BETTER MARKETING PRACTICES. Yearbook 1928: 235–236, illus. 1929.
"An evaluation of the properties of cotton fibers is the key to the extension of the standards system and to further simplification and refinement of existing standards."

POPE, O. A. (698)
THE DETERMINATION OF SAMPLE SIZE FOR DIAMETER MEASUREMENTS IN COTTON-FIBER STUDIES. Jour. Agr. Research 43: 957–984, illus. 1931.

SHEPPARD, W. (699)
ANALYSIS OF COTTON SEED AND WOOL. U.S. Commr. Patents Rpt. 1849 (Agr.): 317, illus. 1850.
Composition of ash residuum of burnt cottonseed and of cotton wool.

TAYLOR, THOMAS. (700)
MICROSCOPIC INVESTIGATION. Dept. Agr. Rpt. 1872: 188–203, illus. 1873.
Fiji Island cotton, pp. 192–193. The writer discusses "artificial knots" seen with microscope and concludes that they are caused by the use of rollers in ginning.

UNITED STATES PATENT OFFICE. (701)
COTTON. U.S. Commr. Patents Rpt. 1853 (Agr.): 178–197, illus. 1854.
Consists of replies to a questionnaire sent manufacturers in different parts of the United States "in consequence of a degree of uncertainty prevailing in regard to the amount of injury or loss sustained by careless harvesting and ginning." The following questions are among those discussed: "(1) Does the well-matured cotton-boll yield its staple, or fibre, of different lengths in one or the same boll or lock? or does the product of an individual seed exhibit an approximate uniformity in its length before separation by the gin? * * * (4) What is the percentage of loss arising from shortened or divided fibre, caused by ginning, which flies off during the process of manufacturing; and how much * * * are the strength and durability of * * * fabrics diminished in consequence of such breakage or division? (5) Has the general condition of cotton staple, as to length and strength, deteriorated within the last 20 years?" Continued in U.S. Commr. Patents Rpt. 1854 (Agr.): 181–186. 1855.
Remarks on the cottons of India. [From the reports of the juries of the Exhibition of the Works of Industry of all Nations at London, 1851] pp. 195–197.

SPINNING AND MANUFACTURING TESTS

CAMPBELL, M. E. (702)
SPINNING TESTS OF SELECTED BALES OF SEA ISLAND, AMERICAN-EGYPTIAN, AND EGYPTIAN-SAKELLARIDIS COTTON. A PRELIMINARY REPORT. 17 pp., illus. Bur. Agr. Econ., 1933. [Mimeographed.]

——— and WILLIS, H. H. (703)
SPINNING TEST OF PICKED AND SNAPPED COTTON (TEXAS—CROP OF 1926). A PRELIMINARY REPORT. 13 pp. Bur. Agr. Econ., 1928. [Mimeographed.]

COBB, N. A. (704)
TESTS OF THE WASTE, TENSILE STRENGTH, AND BLEACHING QUALITIES OF THE DIFFERENT GRADES OF COTTON AS STANDARIZED BY THE UNITED STATES GOVERNMENT. Dept. Bull. 62, 8 pp., illus. [1914.]

Preliminary statements of tests made at certain institutions and mills. Sources of cotton used and mill conditions of the experiments are described.

DEAN, W. S. (705)
MANUFACTURING TESTS OF COTTON FUMIGATED WITH HYDROCYANIC-ACID GAS. Dept. Bull. 366, 12 pp., illus. 1916.

Tests on cotton (Sakellaridis Egyptian) fumigated for the destruction of pink bollworm larvae. Results indicated that fumigation does not materially affect "the percentages of waste, spinning qualities, tensile strength, bleaching, dyeing, or mercerizing properties of the cotton."

——— and TAYLOR, FRED. (706)
MANUFACTURING TESTS OF THE OFFICIAL COTTON STANDARDS FOR GRADE. Dept. Bull. 591, 27 pp., illus. 1917.

Tests showed that "after making allowances for the losses due to the cleaning processes there is comparatively little difference between the grades above and those below middling in the price paid by the manufacturer for each pound of the usable cotton obtained from bales of the different grades, but that there is a difference in the intrinsic value per pound of the manufactured product" (p. 27).

MEADOWS, W. R., and BLAIR, W. G. (707)
COMPARATIVE SPINNING TESTS OF MEADE AND SEA-ISLAND COTTONS. Dept. Bull. 946, 5 pp., illus. 1921.

"Comparing the breaking strength of the Meade and sea-island yarns for the three seasons [1916–17, 1918–19, 1919–20], a difference of 17.2 pounds was found in favor of the sea-island for the 23's yarn and 1.68 pounds for the 100's yarn."

——— and BLAIR, W. G. (708)
COMPARATIVE SPINNING TESTS OF SUPERIOR VARIETIES OF COTTON (GROWN UNDER WEEVIL CONDITIONS IN THE SOUTHEASTERN STATES; CROP OF 1921). Dept. Bull. 1148, 7 pp., illus. 1923.

The tests "were conducted to determine the relative spinning value of cotton commercially thought to be of superior character with that of a number of pure strains of superior varieties of cotton. All were grown under bollweevil conditions in the southeastern cotton States during the season of 1921." Results showed spinning advantages of fiber produced by purebred strains of superior varieties over fiber produced from commercial seed.

——— and BLAIR, W. G. (709)
PRELIMINARY MANUFACTURING TESTS OF THE OFFICIAL COTTON STANDARDS OF THE UNITED STATES FOR COLOR FOR UPLAND TINGED AND STAINED COTTON. Dept. Bull. 990, 12 pp., illus. 1921.

——— and BLAIR, W. G. (710)
SPINNING TESTS OF COTTON COMPRESSED TO DIFFERENT DENSITIES. Dept. Bull. 1135, 19 pp., illus. 1923.

"Tests showed that compressing cotton to standard or high density when in a dry or normal condition is not injurious to its spinning value."

——— and BLAIR, W. G. (711)
SPINNING TESTS OF REGINNED AND CLEANED COTTON. 4 pp. Bur. Markets, 1921. [Mimeographed.]

TAYLOR, FRED, and DEAN, W. S. (712)
COMPARATIVE SPINNING TESTS OF THE DIFFERENT GRADES OF ARIZONA-EGYPTIAN WITH SEA ISLAND AND SAKELLARIDIS EGYPTIAN COTTONS. Dept. Bull. 359, 21 pp., illus. 1916.
"The difference in the tensile strength of yarn made from the three kinds of cotton was practically negligible * * * After bleaching, dyeing and mercerizing, the Arizona-Egyptian and sea-island cottons were practically equal and slightly superior to the Sakellaridis."
——— and EARLE, D. E. (713)
MANUFACTURING AND LABORATORY TESTS TO PRODUCE AN IMPROVED COTTON AIRPLANE FABRIC. Dept. Bull. 882, 48 pp., illus. 1920.
Varieties tested were Pima, sea-island and high-grade Sakellaridis-Egyptian. Sakellaridis-Egyptian gave the strongest yarn and cloth. Signal Corps specifications for airplane cloth, pp. 2–6. Elasticity curves (figs. 1–23).
——— and SHERMAN, W. A. (714)
SPINNING TESTS OF UPLAND LONG-STAPLE COTTONS. Dept. Bull. 121, 20 pp., illus. [1914.]
"Tests of upland long-staple cotton as compared with Deltas of the 1912 crop" showed that certain varieties being produced in the Southeast were "fully equal in almost every respect to average Deltas of the same length."
WILLIS, H. H. (715)
CLEANING LOW-GRADE COTTON (TEXAS—CROP OF 1926). A PRELIMINARY REPORT. 15 pp., illus. Bur. Agr. Econ., 1928. [Mimeographed.]
Results of a test "to determine the relative spinning value of cottons harvested by the three methods—picking, snapping, and sledding—the snapped and sledded cottons having been passed through a boll extractor. Other factors such as variety and, in so far as possible, environment, were identical. A subtest was also conducted on sledded cotton to study the effect of an additional process of cleaning in the picker room."
——— (716)
COTTON LINT RESEARCH. Yearbook 1926: 267–271, illus. 1927.
Discusses the work of the cotton-testing project of the Bureau of Agricultural Economics, United States Department of Agriculture. Includes a description of the cotton-fiber laboratory.
——— (717)
EFFECTS OF METHODS OF HARVESTING AND WEATHER EXPOSURE ON SPINNING QUALITY OF COTTON (TEXAS AND OKLAHOMA—CROP OF 1926). A PRELIMINARY REPORT. 23 pp. Bur. Agr. Econ., 1928. [Mimeographed.]
——— (718)
MANUFACTURING TESTS OF COTTON OF THE WHITE GRADES OF THE UNIVERSAL STANDARDS FOR AMERICAN COTTON. Dept. Bull. 1488, 30 pp., illus. 1927.
——— and CUMMINGS, E. S. (719)
RESULTS OF SPINNING TESTS OF SOUTH CAROLINA COTTONS (CROP OF 1925). A PRELIMINARY REPORT. 10 pp. Bur. Agr. Econ., 1927. [Mimeographed.]
Conducted to determine the relative spinning value of three grades of representative cotton grown in certain sections of South Carolina.
——— (720)
SPINNING TESTS OF ACALA AND PIMA COTTON, SAN JOAQUIN VALLEY, CALIFORNIA. (CROP OF 1924). A PRELIMINARY REPORT. 21 pp. Bur. Agr. Econ., 1925. [Mimeographed.]
——— (721)
SPINNING TEST OF ACALA COTTONS GROWN IN NEW MEXICO (CROP OF 1926). A PRELIMINARY REPORT. 14 pp. Bur. Agr. Econ., 1928. [Mimeographed.]
——— (722)
SPINNING TESTS OF LEADING VARIETIES OF NORTH CAROLINA COTTONS (CROP OF 1925). A PRELIMINARY REPORT. 28 pp. Bur. Agr. Econ., 1926. [Mimeographed.]
The varieties tested were Acala, Mexican no. 6, Mexican no. 14, Mexican no. 18, Trice, Sugar Loaf, and Cleveland, grown in several counties in the eastern part of North Carolina.

WILLIS, H. H. (723)

SPINNING TESTS OF LEADING VARIETIES OF SOUTH CAROLINA COTTONS (CROP OF 1925). A PRELIMINARY REPORT. 37 pp. Bur. Agr. Econ., 1926. [Mimeographed.]

Conducted to study the comparative spinning value of seven well-known varieties grown in South Carolina: Deltatype no. 4, Hartsville no. 20, Deltatype-Webber no. 49, Dixie Triumph, Piedmont-Cleveland, Coker-Cleveland, and Wannamaker-Cleveland.

——— (724)

SPINNING TESTS OF LEADING VARIETIES OF TEXAS COTTON (CROP OF 1924). A PRELIMINARY REPORT. 19 pp. Bur. Agr. Econ., 1926. [Mimeographed.]

——— (725)

SPINNING TESTS OF LEADING VARIETIES OF TEXAS COTTON (CROP OF 1923). A PRELIMINARY REPORT. 17 pp. Bur. Agr. Econ., 1925. [Mimeographed.]

——— (726)

SPINNING TESTS OF PICKED AND SNAPPED COTTONS (TEXAS AND OKLAHOMA—1925 CROP). A PRELIMINARY REPORT. 18 pp. Bur. Agr. Econ., 1926. [Mimeographed.]

——— and MCNAMARA, H. C. (727)

SPINNING TESTS OF SOME TEXAS-GROWN VARIETIES OF COTTON (CROPS OF 1923, 1924, AND 1925). A PRELIMINARY REPORT. 27 pp., illus. Bur. Agr. Econ., 1928. [Mimeographed.]

——— (728)

UTILIZATION OF PIMA COTTON. Dept. Bull. 1184, 27 pp., illus. 1923.

"The purpose of this bulletin is to discuss some of the objections current among manufacturers regarding the production, the textile qualities, and the utilization of Pima cotton as found during a cooperative investigation conducted by the Bureau of Plant Industry, the Bureau of Agricultural Economics, and the Arizona Pima Cotton Growers." Pima cotton compared with Sakellaridis in strength and capability for mercerization, pp. 7–10.

COLOR STUDIES

NICKERSON, DOROTHY. (729)

APPLICATION OF COLOR MEASUREMENT IN THE GRADING OF AGRICULTURAL PRODUCTS. A PRELIMINARY REPORT. 36 pp. Bur. Agr. Econ., 1932. [Mimeographed.]

Literature cited, pp. 35–36.

——— and WELSH, C. F., compilers. (730)

COLOR CONVERSION TABLES. TABLES FOR CONVERTING THE DISC AREAS OF CONSTANT BRILLIANCE AND CHROMA TO COLOR NOTATION IN TERMS OF HUE, BRILLIANCE AND CHROMA. 2 pp., 62 tables. Bur. Agr. Econ., 1930. [Mimeographed.]

Compiled for use in standardization work.

——— (731)

COLOR MEASUREMENT OF FARM PRODUCTS IS A FACTOR IN GRADING. Yearbook 1928: 206–208, illus, 1929.

——— (732)

COTTON PROGRESSIVELY LOWERED IN GRADE BY EXPOSURE, TESTS SHOW. Yearbook 1932: 150–152, illus. 1932.

Methods of procedure and some results of a color study made in 1930 by the United States Department of Agriculture on cotton grown at the South Carolina Agricultural Experiment Station at Clemson College.

——— (733)

A METHOD FOR DETERMINING THE COLOR OF AGRICULTURAL PRODUCTS. Tech. Bull. 154, 32 pp., illus. 1929.

"Experiments made on cotton are used throughout this bulletin as an example of what may be done with other products. They include spectrophotometric, photometric, and colorimetric measurements * * * In order to illustrate how these color readings may be translated into terms which may be used by nonscientific workers * * * the develment of hay conversion tables is described."

NICKERSON, DOROTHY, and MILSTEAD, L. D. (734)
STUDIES OF STABILITY OF COLOR IN RAW COTTON. A PRELIMINARY REPORT. 22 pp., illus. Bur. Agr. Econ., 1933. [Mimeographed.]
"To determine the kind and amount of color change in cotton and to study the extent to which other factors are related to these changes, a series of seven cottons from different parts of the Cotton Belt was examined. One cotton was examined for the 1931 season; six other cottons were added for the study of 1932 cotton." Results are summarized as follows: "The chief points are that: (1) Upland cottons at time of opening were fairly constant in brightness; (2) upland cottons at time of opening varied greatly in amount of creaminess or chroma; (3) the creamier cottons held their brightness better than did the whiter cottons; and (4) in most cases there seemed to be a high correlation between amount of rainfall and change in brightness."

UTILIZATION

GENERAL

BENTON, M. C., compiler. (735)
USES FOR COTTON. SELECTED REFERENCES IN THE ENGLISH LANGUAGE. Bur. Agr. Econ. Libr. Agr. Econ. Bibliog. 44, 43 pp. 1932. [Mimeographed.]
"This bibliography lists references to books, pamphlets, and periodical articles which show the variety of uses for cotton. No attempt has been made to include references to uses for cottonseed and cottonseed products, although several such uses appear in connection with other references. With a few exceptions the period covered is 1910 to November 1932, inclusive."

BRAND, C. J. (736)
CROP PLANTS FOR PAPER MAKING. Bur. Plant Indus. Circ. 82, 19 pp., illus. 1911.
"Printed on paper made wholly or in part from crop wastes and by-products from corn, broom corn, rice, and cotton." Cotton-hull fiber and stalks as source for paper, pp. 13–14. Page 19 is made from cornstalks and cotton hulls.

——— (737)
THE UTILIZATION OF CROP PLANTS IN PAPER MAKING. Yearbook 1910: 329–340, illus. 1911.
Cotton-hull fiber, pp. 334–335. Cotton stalks, pp. 335–336.

CHEATHAM, R. J., FETROW, W. W., and FARRINGTON, C. C. (738)
COTTON CONSUMPTION IN POWER LAUNDRIES OF THE UNITED STATES—1928. A PRELIMINARY REPORT. Bur. Agr. Econ., Div. Cotton Marketing Util. Amer. Cotton Ser. 10, 16 pp., illus. 1930. [Mimeographed.]
"It is estimated that the power laundries of the United States consumed about 52,000 bales of cotton during 1928, through wash nets, twine, padding, sheeting, laundry bags, double-faced felt, and cover duck" (p. 16). Statistical data for various uses are included.

——— and WIGINGTON, J. T. (739)
COTTON PICKING SACKS, COTTON PICKING SHEETS, AND TARPAULINS USED ON COTTON FARMS OF THE UNITED STATES—1929. A PRELIMINARY REPORT. Bur. Agr. Econ., Div. Cotton Marketing Util. Amer. Cotton Ser. 11, 11 pp., illus. 1931. [Mimeographed.]

——— STRANG, P. M. and CLEAVES, FLORENA. (740)
FARM USES FOR COTTON AND ITS PRODUCTS. A PRELIMINARY REPORT. Bur. Agr. Econ., Div. Cotton Marketing Util. Amer. Cotton Ser. 3, 7 pp. 1928. [Mimeographed.]

——— (741)
NEW USES FOR COTTON . . . ADDRESS, FARMERS' WEEK, CLEMSON COLLEGE, SOUTH CAROLINA, AUGUST 7, 1929. 6 pp. Bur. Agr. Econ. [1929] [Mimeographed.]
"Broadly speaking, the uses of cotton may be grouped under three heads, depending upon whether the manufactured product is intended (1) for clothing, (2) for use in the building trades or other industries, or (3) for household furnishings."

CHEATHAM, R. J., MELOY, G. S., and WIGINGTON, J. T. (742)
SOME USES OF THE PRODUCTS OF THE COTTON PLANT. Bur. Agr. Econ. [1930.]
Chart listing uses of cotton fiber and cottonseed. The uses of the fiber are subdivided into agricultural, household, industrial uses, and wearing apparel. Uses of cottonseed are listed as derived from oil, meal, linters, and hulls.

GROGGINS, P. H. (743)
VAT DYES PLAY BIG PART IN BROADENING COTTON GOODS MARKET. Yearbook 1931: 537. 1931.
"The utilization of printing methods for applying vat colors on lustrous cotton goods has made possible the manufacture of fabrics which are at once serviceable and attractive."

HOLMAN, H. P., LEVINE, B. S., and JARRELL, T. D. (744)
WATERPROOFING AND MILDEWPROOFING OF COTTON DUCK. Farmers' Bull. 1157 (rev. ed.), 10 pp., illus. 1931.
Issued 1920; revised 1931.
Care of cotton duck or canvas on the farm, where it is used "for the protection of machinery, sacked grain, shocks, stacks and ricks, for wagon and truck covers, for awnings and temporary shelters, for horse covers, and for catching grain which falls to the ground during threshing."

JARRELL, T. D., and HOLMAN, H. P. (745)
WATERPROOFING OF CANVAS. REVIEW OF INVESTIGATIONS. 7 pp. Bur. Chem. and Soils, 1927. [Mimeographed.]
Presented before the Sixteenth Annual Convention of the National Tent and Awning Manufacturers' Association, Long Beach, New York, October 11–14, 1927.
Answers "as briefly and simply as possible a number of questions that might be asked" regarding the waterproofing of canvas, such as: How does waterproofing affect the durability of canvas? What are the best treatments for paulins, light-weight tent fabrics, and awning materials? How can treated canvas be tested for water resistance?

KILLOUGH, H. B. (746)
A PARTIAL LIST OF USES OF AMERICAN RAW COTTON. A PRELIMINARY REPORT. Bur. Agr. Econ., Div. Cotton Marketing Util. Amer. Cotton Ser. 1, 19 pp. 1927. [Mimeographed.]
"Some of the principal secondary sources of information about uses for cotton", pp. 16–19.
Tabulations indicate "in so far as possible: (1) Uses for the finished product, (2) grades and staples of cotton required in the manufacture of different fabrics, and (3) relative proportions of the total consumption of raw cotton in the United States which the different manufactures and classes of manufacture represent."

O'BRIEN, RUTH. (747)
SELECTION OF COTTON FABRICS. Farmers' Bull. 1449, 22 pp., illus. 1926.
Lists the standard cotton fabrics, classified according to suitability for various uses; discusses and illustrates details of fabric construction. Glossary of some common cotton fabrics, pp. 19–22.

PHILLIPS, MAX. (748)
LIGNIN, FARM BYPRODUCT, NOW WASTED, MAY SUPPLY CHEAP ORGANIC CHEMICALS. Yearbook 1932: 519. 1932.
"The various byproducts of the agricultural industry, such as cereal straws, cotton stalks, corn stalks, and hulls, are composed principally of carbohydrates, chiefly cellulose and pentosans, and a substance called lignin."

UNITED STATES DEPARTMENT OF AGRICULTURE. [BUREAU OF AGRICULTURAL ECONOMICS. DIVISION OF INFORMATION.] (749)
AGRICULTURAL AND INDUSTRIAL USES OF COTTON. SOME FACTS IN CONNECTION WITH THE EXHIBIT AT THE NATIONAL COTTON SHOW, MEMPHIS, TENNESSEE, SEPT. 28–OCT. 5, 1929. 4 pp. [1929] [Mimeographed.]
[Prepared by J. C. Gilbert.]
The exhibit was sponsored by the New Uses for Cotton Committee. Some of the industries using cotton, list (p. 4).

BAGS AND OTHER CONTAINERS

CHEATHAM, R. J., and FETROW, W. W. (750)
COTTON BAGS AND OTHER CONTAINERS IN THE WHOLESALE GROCERY TRADE. A PRELIMINARY REPORT. Bur. Agr. Econ., Div. Cotton Marketing Util. Amer. Cotton Ser. 6, 12 pp., illus. 1928. [Mimeographed.]

——— (751)
COTTON BAGS IN THE FERTILIZER INDUSTRY. Bur. Agr. Econ., Div. Cotton Marketing Util. Amer. Cotton Ser. 7, 3 pp., illus. [1928] [Mimeographed.]

——— and WIGINGTON, J. T. (752)
USE OF COTTON BAGS AND OTHER CONTAINERS IN FLOUR MILLS OF THE UNITED STATES—1931. A PRELIMINARY REPORT. Bur. Agr. Econ., Div. Cotton Marketing Util. Amer. Cotton Ser. 13, 17 pp. 1932. [Mimeographed.]

KILLOUGH, H. B., STRANG, P. M., and CHEATHAM, R. J. (753)
COTTON BAGS IN THE WHOLESALE GROCERY TRADE. A PRELIMINARY REPORT. Bur. Agr. Econ., Div. Cotton Marketing Util. Amer. Cotton Ser. 2, 9 pp., illus. 1927. [Mimeographed.]

PARK, JOHN. (754)
THE USE OF COTTON BAGS AS CONSUMER PACKAGES FOR POTATOES. Bur. Agr. Econ., Div. Cotton Marketing Util. Amer. Cotton Ser. 9, 7 pp. 1929. [Mimeographed.]

UNITED STATES DEPARTMENT OF AGRICULTURE. BUREAU OF AGRICULTURAL ECONOMICS. DIVISION OF FRUITS AND VEGETABLES. (755)
USE OF CONSUMER PACKAGES IN MARKETING POTATOES. 3 pp. [1930] [Mimeographed.]

YOUNGBLOOD, BONNEY, CHEATHAM, R. J., and NIXON, R. L. (756)
COTTON BAGGING FOR COTTON. A PRELIMINARY REPORT. Bur. Agr. Econ., Div. Cotton Marketing Util. Amer. Cotton Ser. 4, 13 pp. 1928. [Mimeographed.]

HOUSEHOLD USES

O'BRIEN, RUTH. (757)
TEXTILE BUYING FOR THE HOME WOULD BE AIDED BY SYSTEM OF LABELING. Yearbook 1931: 513–516. 1931.

"A large gap now exists between the technical information in regard to fabric manufacture and the practical information of value in everyday living * * * It is this type of research upon which the Bureau of Home Economics is making a beginning." A study on the "relative wearing qualities of sheets made with different grades of cotton of the same staple length" is discussed.

UNITED STATES DEPARTMENT OF AGRICULTURE. BUREAU OF AGRICULTURAL ECONOMICS. DIVISION OF INFORMATION. (758)
COTTON IN THE HOME; AN EXHIBIT PREPARED BY THE UNITED STATES DEPARTMENTS OF AGRICULTURE AND COMMERCE, AND THE COTTON TEXTILE INSTITUTE, COOPERATING, NATIONAL COTTON SHOW, MEMPHIS, TENN., SEPTEMBER 28 TO OCTOBER 5, 1929. 8 pp. [1929] [Mimeographed.]

Prepared by J. C. Gilbert.

List of uses of cotton in a 4-room house, pp. 4–5.

UNITED STATES PATENT OFFICE. (759)
COTTON BEDS. U.S. Commr. Patents Rpt. 1844: 281–285. 1845.

From the Jackson (Miss.) Southron.

The advantages of cotton for use in mattresses, and an analysis of the cost of a cotton mattress. Among advantages mentioned is the "medicinal value" of cotton: it is stated that "raw cotton, worn on the parts affected, is one of the best and most effectual cures for rheumatic affections" (p. 75).

VIEMONT, B. M. (760)
COTTON IS UTILIZED AS NEW FOUNDATION MATERIAL FOR MAKING HOOKED RUGS. Yearbook 1932: 558–560, illus. 1932.

Some results of tests made by the Bureau of Agricultural Economics and the Bureau of Home Economics on experimental fabrics. A new cotton material is compared with various kinds of burlap ordinarily used for hooked-rug foundations, table 13 (p. 560).

WEARING APPAREL

CAMPBELL, MAUDE. (761)
DRESSES FOR THE LITTLE GIRL. Leaflet 26, 7 pp., illus. 1928.
Cotton dresses are recommended.

CLARK, E. L. (762)
THE CHANGING USES OF TEXTILE FIBERS IN CLOTHING AND HOUSEHOLD ARTICLES. Misc. Pub. 31, 56 pp., illus. 1928.
"The purposes of this study were: First, to find how the use of cotton, silk, and rayon in the different garments worn by men and women had changed during the preceding 5 years; and second, to determine the extent to which cotton is used in household articles at present and whether there is a tendency for its use in these articles to increase or decrease relative to other textile fibers."

——— (763)
COTTON IN FARM WOMEN'S GARB PARTLY REPLACED BY SILK AND RAYON. Yearbook 1927: 224–225. 1928.
Summary of answers of 231 farm women to a survey, conducted in 1927 by the Bureau of Home Economics, of the uses of cotton in clothing and household articles.

DAVIS, M. A. (764)
CHILDREN'S ROMPERS. Leaflet 11, 7 pp., illus. [1927.]
Suggestions for rompers made of cotton fabrics.

DOWNEY, K. M. (765)
FABRICS FOR CHILDREN'S PLAY SUITS TESTED FOR RESISTANCE TO WEATHER. Yearbook 1931: 221–225, illus. 1931.
Discusses results of data from a study made by the Bureau of Home Economics of cotton and woolen materials for children's wear. "The results obtained * * * seem to indicate that the needed protection from wind and moisture will be given by one of the tightly woven, low permeability materials such as the new American cotton or a proofed sailcloth." A comparison of the construction, weight, and tensile strength of a representative group of the fabrics [cotton and woolen], table 7, (p. 223).

HAYS, M. B., compiler. (766)
TEXTILES AND CLOTHING: SELECTED LIST OF REFERENCES ON THE PHYSICAL TESTING OF FABRICS. Bur. Home Econ. Bibliog. 8 (rev. ed.), 26 pp. 1933. [Mimeographed.]

HESS, KATHERINE, FLOYD, E. V., and BAKER, LILIAN. (767)
A COMPARATIVE STUDY OF THE PROTECTIVE VALUE OF CERTAIN FABRICS IN STILL AND MOVING AIR. Jour. Agr. Research 41: 139–146, illus. 1930.
"The following fabrics commonly used in clothing were studied: Canton flannel, nap in and nap out; knit cotton underwear; knit infant's vest, wool and cotton; navy-blue flannel; and gray astrakhan, pile in and pile out."

———, HAMILTON, J. O., and JUSTIN, MARGARET. (768)
PROTECTION AFFORDED THE SKIN AGAINST SUNBURN BY TEXTILE FIBERS. Jour. Agr. Research 35: 251–259, illus. 1927.
"The data submitted from a number of tests tend to prove that the protection from sunburn afforded the skin by fabrics depends primarily upon the percent of interspace due to weave but that the vegetable fibers, cotton and linen, transmit some of the rays that burn and tan, thus offering a small coefficient of protection, whereas the animal fibers, silk and wool, absorb a larger portion of these rays, thus offering a higher coefficient of protection. Due to the fact that temperature is a factor in the burning of the skin the greater conductivity of cotton and linen, as compared with that of silk and wool, might in a measure account for the higher prospective value of silk and wool."

O'BRIEN, RUTH, PETERSON, E. C., and WORNER, R. K. (769)
BIBLIOGRAPHY ON THE RELATION OF CLOTHING TO HEALTH. Misc. Pub. 62, 146 pp. 1929.
Includes references to books and articles in English, French, and German.
References to properties of cotton, subject index, p. 143.

O'BRIEN, RUTH. (770)
COTTON FABRICS AGAIN IN FASHION'S FAVOR FOR WOMEN'S SUMMERWEAR. Yearbook 1928: 233–235, illus. 1929.
The suitability of cotton for summer garments is discussed; the possibilities of industrial cloths, such as osnaburg, for household decoration are mentioned.

——— (771)
COTTON TRADE FEELS CHANGES OF STYLES IN WOMEN'S CLOTHING. Yearbook 1927: 232–234. 1928.
"An attempt was made recently [by the Bureau of Home Economics] to determine the influence of dress styles and patterns on the consumption of yardage. The results of the study showed that during the past 10 years there has been a marked decrease in the amount of fabric required for women's dresses. About 2 yards less of material is needed now for each dress than was required in 1918."

——— (772)
SUN SUITS FOR CHILDREN. Leaflet 24, 7 pp., illus. 1928.
Includes pictures of suits made of cotton.

SCOTT, C. L. (773)
COTTON FABRICS ARE THE MOST SUITABLE FOR CHILDREN'S WEAR. Yearbook 1930: 190–192, illus. 1930.

——— (774)
DRESSES FOR LITTLE GIRLS. Leaflet 80, 8 pp., illus. 1931.
Cotton materials are recommended.

——— (775)
ENSEMBLES FOR SUNNY DAYS. Leaflet 63, 4 pp., illus. 1930.
Cotton is used for these garments.

——— (776)
ROMPERS. Leaflet 79, 8 pp., illus. 1931.
Cotton broadcloth is used.

——— (777)
SUITS FOR THE SMALL BOY. Leaflet 52 (rev. ed.), 8 pp., illus. 1930.
Issued 1929; revised 1930.
"Children may wear cotton fabrics the year round provided the underwear is adjusted to the season. Heavy cottons such as jean, madras, and piqué may be used for winter wear" (p. 7).

VAN DEMAN, RUTH, compiler. (778)
SELECTED LIST OF GOVERNMENT PUBLICATIONS ON TEXTILES AND CLOTHING. Bur. Home Econ. Bibliog. 3 (rev. ed.), 17 pp., 1930. [Mimeographed.]
Cotton, pp. 5–7.

VIEMONT, B. M. (779)
PLAY SUITS FOR WINTER. Leaflet 54, 8 pp. illus. 1929.
"For many years wool fabrics were considered the only ones that would really hold in heat. Recently, however, cotton materials that compare favorably with the wools, are appearing on the market. Although they may not replace wool entirely, in some cases they may be used to advantage."

FABRIC FINISHING AND LAUNDERING

DOWNEY, K. M. (780)
LAUNDRY TESTS UNDER SCIENTIFIC CONTROL SHOW HOW TO PREVENT DAMAGE. Yearbook 1932: 569–572, illus. 1932.
Tests were made by the Bureau of Home Economics on sheets, manufactured under supervision of the Bureau of Agricultural Economics from known grades of raw cotton. A method for measuring the degree of scorch is discussed. Photographs of materials, yarns, and fibers show weakening effect of scorch.

FURRY, M. S. (781)
SOME PHYSICAL PROPERTIES OF STARCH PASTES WHICH AFFECT THEIR STIFFENING POWER ON FABRICS. Tech. Bull. 284, 18 pp., illus. 1932.
"This study shows that the stiffness of a sized fabric depends on the penetrating and coating powers of starch pastes, and these factors in turn depend in a general way on the consistency of the pastes * * * The size of the swollen starch granules bears a definite relation to the penetrating and coating powers of the starch pastes." Photomicrographs are included.

HILL, A. E. (782)
ARTIFICIAL SOILING OF COTTON FABRICS PREPARATORY TO LAUNDERING STUDIES. Jour. Agr. Research 39: 539–550, illus. 1929.
Literature cited, pp. 549–550.
"A comparative study of the black constituents suggested for use in experimental soiling methods results in the recommendation of Oildag for this purpose. Samples soiled with mixtures containing this material are of uniform and reproducible brightness."

PETERSON, E. C. (783)
COTTON FABRIC FINISH MAY BE RESTORED BY RIGHT LAUNDERING. Yearbook 1927: 219–221, illus. 1928.
"Experiments have been made in the Bureau of Home Economics * * * Approximately 25 different common cotton fabrics were laundered and ironed but not resized. The effect of the laundering operation was then observed by making a comparison between the original and the laundered fabrics."

——— and DANTZIG, TOBIAS. (784)
FABRICS' STIFFNESS IS MEASURABLE BY DEVICE MADE FOR THE PURPOSE. Yearbook 1928: 279–280. 1929.
"As a part of the study on starches and other sizing agents for finishing new fabrics and restoring the finish to laundered materials, a quantitative method of measuring stiffness in fabrics has been developed in the Bureau of Home Economics."

——— and DANTZIG, TOBIAS. (785)
STIFFNESS IN FABRICS PRODUCED BY DIFFERENT STARCHES AND STARCH MIXTURES, AND A QUANTITATIVE METHOD FOR EVALUATING STIFFNESS. Tech. Bull. 108, 30 pp., illus. 1929.
Literature cited, pp. 27–29.
Stiffness has been considered an important property included in the term "feel." "A physical method for measuring the stiffness of materials and the abilities of wheat, rice, corn, and potato starches to produce stiffness in a cotton fabric have been determined. The methods employed for desizing the fabric and preparing the starches and starch pastes are given."

COTTONSEED AND COTTONSEED PRODUCTS

GENERAL

BOERNER, E. G. (786)
THE INTRINSIC VALUES OF GRAIN, COTTONSEED, FLOUR AND SIMILAR PRODUCTS, BASED ON THE DRY-MATTER CONTENT. Dept. Bull. 374, 32 pp., illus. 1916.

CRESWELL, C. F., and BIDWELL, G. L. (787)
COMPOSITION OF COTTONSEED. Dept. Bull. 948, 221 pp., illus. 1921.
"Issued for the guidance of producers, dealers, and crushers in order that they may know more nearly the content of the product in which they are dealing and be better able to judge the value and consequently the price that can be paid for seed. It sets forth data showing as nearly as possible approximate oil and meal yields in each county of the cotton belt." Data were collected from 1914–15 to 1918–19, inclusive.

GARNER, W. W., ALLARD, H. A., and FOUBERT, C. L. (788)
OIL CONTENT OF SEEDS AS AFFECTED BY THE NUTRITION OF THE PLANT. Jour. Agr. Research 3: 227–249, illus. 1914.
Experiments were made for the most part on soybeans, but some tests were made with cottonseed, pp. 240–241. Varietal differences in the oil content of cottonseed grown in northern Georgia and in the Coastal Plain region of South Carolina, table 8 (p. 239). Results of tests with cotton at Manning, S.C., to determine the influence of fertilizers on the oil content of the seed, table 12 (p. 246).

MELOY, G. S. (789)
COTTONSEED GRADES ARE TO BE ISSUED. Yearbook 1926: 275–276. 1927.
"During the crushing season of 1925–26, the Department of Agriculture began a study of cottonseed to determine whether it is possible to grade them for crushing purposes in the primary markets. These studies indicate that cottonseed may be graded on the basis of their kernel content and official grades will be established as soon as the necessary apparatus and proper methods for grading are worked out."

MELOY, G. S. (790)

COTTONSEED'S KERNEL, CONTENT AND COMPONENTS ARE BASIS OF GRADING. Yearbook 1928: 241–242. 1929.

"The value of a ton of seed may be measured by its kernel content even though a pound of oil is worth many pounds of protein, for nature has set up a natural correlation between the amount of oil and the amount of protein in the same seed. This relation is so consistent that it may be considered a rule that as the percentage of oil goes down the percentage of protein goes up, the values tending to balance one another."

——— (791)

A STUDY OF THE VARIABLE COMPOSITION OF COTTONSEED. A PRELIMINARY REPORT. 18 pp., illus. Bur. Agr. Econ., 1931. [Mimeographed.]

Includes discussion of variations in composition of cottonseed of different crops; possible influence of rainfall on the composition of cottonseed; variations during a season. Tables are included.

SIEVERS, A. F., and LOWMAN, M. S. (792)

A STUDY OF COTTONSEED WITH REFERENCE TO VARIETAL CHARACTERISTICS AND SOURCES OF PRODUCTION. 12 pp., illus. Bur. Plant Indus. [1932] [Mimeographed.]

Review of the literature, pp. 2–4.

"A study of the relative value of the seed of cotton varieties for the production of oil-mill products with reference to the oil and ammonia content of the seed was undertaken at the request of the Cottonseed Products Industries. Through a cooperative arrangement the seed samples were furnished by the Division of Cotton, Rubber, and Other Tropical Plants from experimental plots grown in connection with adaptation and lint-production studies.

"The work extended through five successive seasons, from 1923 to 1927, inclusive. Seed from 42 varieties was included, but data sufficient to be of value were obtained from only 30 of these. The varieties were grown in a number of localities * * * 1 each in Arizona, Florida, Kansas, New Mexico, Oklahoma, South Carolina, and Virginia, 3 in Texas, and 4 in California. In Arizona, New Mexico, and California, the varieties were grown under irrigation.

"The percentage of moisture, fuzz, meats, oil, and ammonia in the seed was determined, but only the last three are included in the tabulated data. The ammonia determinations were made by the Barrow-Agee laboratories at Memphis, Tenn."

GERMINATION, SELECTION, AND DISTRIBUTION

DUVEL, J. W. T. (793)

THE VITALITY OF BURIED SEEDS. Bur. Plant Indus. Bull. 83, 22 pp., illus. 1905.

Gossypium hirsutum L. was one of the seeds selected for experimentation.

HICKS, G. H. (794)

THE VITALITY OF SEED TREATED WITH CARBON BISULPHID. Div. Bot. Circ. 11, 5 pp., illus. [1897.]

Cottonseed will "endure the most severe treatment with the fumes of carbon bisulphid without their germination being injured to any appreciable extent."

KEARNEY, T. H. (795)

SEED SELECTION OF EGYPTIAN COTTON. Dept. Bull. 38, 8 pp. 1913.

Bibliography, pp. 7–8.

History of Egyptian type and its cultivation in Arizona. Methods to be used by farmers and associations in maintaining a pure seed supply.

KNAPP, BRADFORD. (796)

SELECTION OF COTTON AND CORN SEED ON SOUTHERN FARMS. Bur. Plant Indus. Doc. 747, 8 pp., illus. 1912.

Revision of Bureau of Plant Industry. Document 485, The Selection of Cotton and Corn Seed for Southern Farms, by S. A. Knapp, 1909.

KNAPP, S. A. and BARROW, D. N. (797)
SEED SELECTION FOR SOUTHERN FARMS. Bur. Plant Indus. Doc. 386, 8 pp., illus. 1908.
"Five points should be carefully noted in cottonseed improvement: Type, variety, selection, ginning, and storing."

LUDWIG, C. A. (798)
THE GERMINATION OF COTTONSEED AT LOW TEMPERATURES. Jour. Agr. Research 44: 367–380, illus. 1932.

ORTON, W. A. (799)
CIRCULAR OF INFORMATION TO ACCOMPANY SEED OF WILT-RESISTANT UPLAND COTTON, 1907. Bur. Plant Indus. Doc. 263, 3 pp. 1907.

——— (800)
WILT-RESISTANT JACKSON COTTON. Bur. Plant Indus., Seed and Plant Introd. Distrib. [Unnumb. Pub.], 2 pp. 1904.
Circular mailed with seed. Includes description of variety, and directions for planting and saving seed.

PIETERS, A. J. (801)
AGRICULTURAL SEEDS—WHERE GROWN AND HOW HANDLED. Yearbook 1901: 233–256, illus. 1902.
Cotton, pp. 249–250. "A great deal of special breeding is now going on among cotton experts, but such careful methods have not yet come into general use."

——— (802)
THE BUSINESS OF SEED AND PLANT INTRODUCTION AND DISTRIBUTION. Yearbook 1905: 291–306, illus. 1906.
Description of methods of the Office of Seed and Plant Introduction and Distribution of the Bureau of Plant Industry. Cotton, pp. 295–296. "As new varieties of merit are found seed is bought and distributed, and contracts are made for an acreage of such new varieties as are still in process of selection."

TOOLE, E. H., and DRUMMOND, P. L. (803)
THE GERMINATION OF COTTONSEED. Jour. Agr. Research 28: 285–292, illus. 1924.
A preliminary study of germination tests.

UNITED STATES DEPARTMENT OF AGRICULTURE. (804)
TESTS OF DEPARTMENT SEEDS. Dept. Agr. Rpt. 1872: 407–423, illus. 1873.
Tahiti cotton, p. 423. Results of planting seeds of Tahiti cotton. "The Tahiti cotton is evidently a sea-island variety, resembling that of the Fiji Islands in black seed and length and fineness of staple. It is feared, however, that when planted inland it will very much deteriorate."

——— BUREAU OF PLANT INDUSTRY. (805)
CONGRESSIONAL SEED AND PLANT DISTRIBUTION CIRCULARS, 1902–1903. Bur. Plant Indus. Bull. 25, 82 pp., illus. 1902.
Consists of a number of circulars prepared by different members of the scientific force of the Bureau of Plant Industry and one prepared by the Chief of the Bureau of Soils. These circulars were originally printed to accompany the seeds sent out through the Congressional distribution and consist of descriptions of varieties and directions for their culture. Partial contents: Plan of distributing the varieties; description of varieties distributed; methods of cultivation and ginning, by H. J. Webber.—Rivers sea-island cotton (a variety resistant to the wilt disease or "Black-root"), by W. A. Orton.—Sea-island cotton no. 224, by W. A. Orton.

——— BUREAU OF PLANT INDUSTRY. (806)
DISTRIBUTION OF COTTON SEED. 1903–1923. 21 nos., illus. 1903–[1923].
1921 is Dept. Circ. 151. No more published.

WEBBER, H. J. (807)
IMPROVEMENT OF COTTON SEED SELECTION. Yearbook 1902: 365–386, illus. 1903.
"It is the writer's object in this paper to discuss the salient principles on which the production of improved seed rests, and to describe both simple and complex methods of selection."

COTTONSEED FOR PLANTING PURPOSES

BALLARD, W. W., and DOYLE, C. B. (808)
COTTONSEED MIXING INCREASED BY MODERN GIN EQUIPMENT. Dept. Circ. 205, 12 pp., illus. 1922.
Supplemental to Department Bulletin 288, Custom Ginning as a Factor in Cottonseed Deterioration, by D. A. Saunders and P. V. Cardon. 1915 (see item 492).
This circular "shows the result of a similar test conducted in 1920 by one of the writers, Mr. Ballard, at Greenville, Tex., by the method that was used in 1914, but with a more recent type of ginning equipment."

BARR, J. E. (809)
DELINTING AND RECLEANING COTTONSEED FOR PLANTING PURPOSES. Dept Bull. 1219, 20 pp., illus. 1924.
The delinting machine was the same type as that used extensively in cottonseed-oil mills, and the recleaning machine, a type used for recleaning all kinds of seed.
"Investigations show that each of the two processes possesses certain definite advantages but is of greatest value or is most effective when performed in conjunction with the other."

——— (810)
MARKETING COTTONSEED FOR PLANTING PURPOSES. Dept. Bull. 1056 (rev. ed.), 23 pp., illus. 1926.
Issued 1922; revised 1926.
Discussion of "some of the fundamental points in selecting, improved methods of preparing and storing, and ways of overcoming or eliminating some of the existing unfair and unscrupulous practices in selling planting cottonseed." Total quantity of cottonseed required for planting and estimated normal percentage and quantity obtained from various sources, table I (p. 2). Delinting, pp. 4–11.

COTTONSEED PRODUCTS

GENERAL

AGELASTO, A. M. (811)
LINTERS. Dept. Circ. 175, 10 pp., illus. 1921.
A general discussion of how linters are obtained, production of linters, handling, commercial values, uses, etc. Included is a statement prepared by the War Department describing "the processes through which the cotton fiber passes in its preparation for use in the manufacture of gun cotton" (p. 9).

BOYKIN, E. B. (812)
COMPARATIVE VALUE OF WHOLE COTTON SEED AND COTTON-SEED MEAL IN FERTILIZING COTTON. Farmers' Bull. 286, 14 pp., illus. 1907.
Experiments were "carried on in connection with Mr. John C. Fletcher's cotton farm at McColl, S.C.", over a period of several years. "In these tests 1,000 pounds of meal were used in comparison with 1 ton of seed, and it is evident from the results that less meal would have yielded as much as the seed. It is believed, therefore, that these results amply justify the assumption that 900 pounds of meal is at least equivalent to a ton of seed in effect on the crop; that is, on such land as was used for this experiment."

COLEMAN, D. A., and FELLOWS, H. C. (813)
A SIMPLE METHOD FOR DETERMINING THE OIL CONTENT OF SEEDS AND OTHER OIL-BEARING MATERIALS. Tech. Bull. 71, 14 pp., illus. 1928.
"The optical method applied to cottonseed products by Wesson was found most promising. The procedure necessary in the application of the optical method to a number of commodities was worked out in the grain-research laboratory of the Bureau of Agricultural Economics, and a standard practice for each is recommended."

COOPER, J. H. (814)
COTTON-SEED OIL, ETC. U.S. Commr. Patents Rpt. 1844: 431–432. 1845.
The writer suggests that oil and cake be manufactured from cottonseed, "of so little value hitherto." He concludes that "The present low prices of cotton will present a sufficient inducement to planters to save and sell the seed at reasonable prices; and it is believed that, if a cheap and effective mode of refining the oil can be discovered, this branch of manufacture will become one of very high value to the country."

DAUGHERTY, C. M. (815)

THE COTTON-SEED INDUSTRY. Yearbook 1901: 285–298, illus. 1902.

The growth of the industry is traced. Statistics for manufacture of oil and oil products, oil exports, and home consumption are given (p. 294) (year ended June 30, 1872–1901.)

——— (816)

THE INDUSTRY IN OIL SEEDS. Yearbook 1903: 411–426, illus. 1904.

Discussion of production and consumption in the United States, United Kingdom, France, Germany, Holland, Belgium, and Denmark. Statistics for imports and exports are given.

HICKS, G. H. (817)

OIL-PRODUCING SEEDS. Yearbook 1895: 185–204, illus. 1896.

Cottonseed oil, pp. 186–188. "In 1826 a Virginian was led to experiment with cottonseed. He made a small machine with which he was able to express a dark-red oil that gave a fair light when burned in an ordinary lamp. In the same year, it is reported, an oil mill was constructed at Columbia, S.C., which expressed a good quality of oil from cottonseed."

JACKSON, C. T. (818)

CHEMICAL RESEARCHES ON THE SEED OF THE COTTON-PLANT. U.S.Commr. Patents Rpt. 1855 (Agr.): 234–238. 1856.

The author, having noticed that "refuse cottonseeds are partly saved for planting, but by far the greater mass of them is allowed to rot and is then used for manure", makes a suggestion based on analyses of cottonseed, "that cottonseed may be profitably employed in the production of a rich, fat oil, and that the woolly fiber, adhering to the hulls, may be economised in the manufacture of paper, while the substance of the seeds, or their 'meats' after having the oil extracted may be employed for feeding animals; and, probably, would also serve as an excellent fertiliser * * * The object of the present paper is to call the attention of Southern planters and of Northern manufacturers to these new uses to which cottonseed may be applied."

JAMIESON, G. S. (819)

PRODUCTION AND UTILIZATION OF FATS, FATTY OILS, AND WAXES IN THE UNITED STATES. Dept. Bull. 1475, 36 pp., illus. 1927.

Revision of Department Bulletin 769, The Production and Conservation of Fats and Oils in the United States, by H. S. Bailey and B. E. Reuter. 1919.

Cottonseed oil, pp. 4–8; preparation: pressing, settling, refining, wintering; grades (as established by the Interstate Cotton Seed Crushers Association); uses; statistics, pp. 34–36; production, consumption, imports, raw materials used, 1921–25.

LANGWORTHY, C. F., and HOLMES, A. D. (820)

DIGESTIBILITY OF SOME VEGETABLE FATS. Dept. Bull. 505, 20 pp., illus. 1917.

The fats studied included cottonseed oil.

MELOY, G. S. (821)

COLOR OF LINTERS ANALYZED AND COLOR STANDARDS ESTABLISHED. 2 pp. Bur. Agr. Econ. [1928]. [Mimeographed.]

Extract from address on the use of the official standards for American cotton linters, Annual Convention of the Better Bedding Alliance of America, Chicago, Ill., January 17, 1928.

——— (822)

COTTON WASTES ARE TURNED BY CHEMISTS INTO PROFIT SOURCES. Yearbook 1927: 234–236, illus. 1928.

"The increased use of cotton goods, resulting from enhanced attractiveness and durability due to mercerization, is problematical, but the diverting of 5,558,243 tons (1926) of cottonseed from the refuse pile into channels of consumption produced $256,027,431 of value that would never have existed but for the intercession of chemical research." A chart (p. 235) shows "where chemistry touches the cotton industry" during growth of plant, in manufacturing processes of the cotton, and in numerous forms of seed products, which are listed.

MELOY, G. S. (823)
COTTONSEED CRUSHING INDUSTRY GROWS. Yearbook 1926: 259–263, illus. 1927.
It is stated that the first practical extraction of cottonseed oil was attempted in a small mill in Columbia, S.C., in 1826.
Growth of the cottonseed-crushing industry in the United States [1826–1925], table 4 (p. 260). (Number of mills, seed crushed, value of products, remarks.)

——— (824)
THE ESTABLISHMENT OF STANDARD GRADES FOR AMERICAN COTTON LINTERS. Misc. Pub. 10, 8 pp. 1927.

POWICK, W. C. (825)
COMPOUNDS DEVELOPED IN RANCID FATS, WITH OBSERVATIONS ON THE MECHANISM OF THEIR FORMATION. Jour. Agr. Research 26: 323–362, illus. 1923.
Literature cited, pp. 360–362.
Cottonseed oil was among the oils studied.

ROSS, W. H., and MERZ, A. R. (826)
FERTILIZER CONCENTRATION NEED NOT INCREASE THE RISK OF BURNING PLANTS. Yearbook 1928: 291–292, illus. 1929.
Includes a formula for cottonseed meal in fertilizer mixtures (p. 291).

STANLEY, LOUISE. (827)
COTTONSEED FLOUR RICH IN VITAMIN G, EXPERIMENTS SHOW. Yearbook 1931: 173–174. 1931.
"Recent research in the department has demonstrated that cottonseed is a valuable source of the pellagra-preventing vitamin. Accordingly, the Bureau of Home Economics is studying the possibilities of cottonseed as a food for human beings." The composition of cottonseed flour is discussed.

TOLMAN, L. M. (828)
DETECTION OF COTTONSEED OIL IN LARD. Yearbook 1904: 359–362, illus. 1905.
The author describes the Bömer test method, with which cottonseed oil is identified by the presence of the telescopic crystals of phytosterol.

UNITED STATES DEPARTMENT OF AGRICULTURE. OFFICE OF EXPERIMENT STATIONS. (829)
COTTONSEED AND ITS PRODUCTS. Farmers Bull. 36, 16 pp. 1896.
Condensed from original articles.
Discusses method of manufacturing cottonseed products; the cottonseed oil industry; cottonseed meal; cottonseed hulls; cotton-hull ashes; and feeding cottonseed products to farm stock.

——— BUREAU OF SOILS. (830)
MINUTES OF CONFERENCE HELD AT THE DEPARTMENT OF AGRICULTURE, WASHINGTON, D.C., TO CONSIDER COST OF PRODUCTION OF COTTONSEED MEAL. ALL PRODUCERS OF THIS MATERIAL WERE INVITED TO BE PRESENT. [OCT. 7, 1919] 41 pp. [1919] [Mimeographed.]

UNITED STATES PATENT OFFICE. (831)
MEMORANDA OF EXPERIMENTS MADE IN JANUARY, 1836, AT NATCHEZ, TO ASCERTAIN THE RELATIVE QUANTITIES OF CRUDE OIL, CAKE, &C., FROM THE SEED OF SHORT STAPLE OR UPLAND COTTON. U.S. Commr. Patents Rpt. 1844: 432–433. 1845.

WILEY, H. W., editor. (832)
PROCEEDINGS OF THE NINTH ANNUAL CONVENTION OF THE ASSOCIATION OF OFFICIAL AGRICULTURAL CHEMISTS HELD AT THE NATIONAL MUSEUM, WASHINGTON, D.C., AUGUST 25, 26, AND 27, 1892. Div. Chem. Bull. 35, 243 pp., illus. 1892.
The Occurrence of Metaphosphoric and Pyrophosphoric Acids in Cottonseed Meal, by M. B. Hardin, pp. 50–52.

COTTONSEED PRODUCTS AS FEED

ARMSBY, H. P. (833)
THE COMPUTATION OF RATIONS FOR FARM ANIMALS BY THE USE OF ENERGY VALUES. Farmers' Bull. 346, 32 pp., illus. 1919.
Cottonseed meal was among the rations studied.

BELL, G. A., and WILLIAMS, J. O. (834)
COTTONSEED MEAL FOR HORSES. Dept. Bull. 929, 10 pp., illus. 1920.
Reports experiments to determine value of cottonseed meal as partial substitute for grain and to assess amount which can be fed to horses with safety.

BETHKE, R. M., SASSAMAN, H. L., KENNARD, D. C., and EDINGTON, B. H. (835)
THE COMPARATIVE NUTRITIVE VALUE OF PROTEINS OF LINSEED MEAL AND COTTONSEED MEAL FOR DIFFERENT ANIMALS. Jour. Agr. Research 36: 855–871, illus. 1928.
Literature cited, pp. 870–871.
Experiments were conducted with rats, pigs, calves, and growing chicks.

BLACK, W. H., LANTOW, J. L., and BURNHAM, D. R. (836)
FATTENING STEERS ON DRY-LAND CROPS OF THE SOUTHWEST. Tech. Bull. 30, 15 pp., illus. 1927.
"Ground milo, sorgo fodder, sorgo silage, cowpea hay, and cottonseed meal were used. * * * Of the four rations * * * not one seems to be materially superior to any of the others in the rate of producing gains in weight. In feed required for 100 pounds of gain, the use of cowpea hay instead of cottonseed meal results in a considerable saving of concentrates. The fodder lot was more economical in the use of concentrates than the silage lot fed cottonseed meal. This is important because about one-sixth to one-seventh of the concentrates fed was cottonseed meal costing about 50 percent more than milo and twice as much as cowpea hay."

———, JONES, J. M., and KEATING, F. E. (837)
SORGO SILAGE, SORGO FODDER, AND COTTONSEED HULLS AS ROUGHAGES IN RATIONS FOR FATTENING CALVES IN THE SOUTHWEST. Tech. Bull. 43, 24 pp., illus. 1928.
"Sorgo silage and sorgo fodder, in each of the three tests, proved to be more efficient than cottonseed hulls when fed to fattening calves."

GALLUP, W. D., and KUHLMAN, A. H. (838)
A PRELIMINARY STUDY OF THE DETERMINATION OF THE APPARENT DIGESTIBILITY OF PROTEIN BY MODIFIED PROCEDURES. Jour. Agr. Research 42: 665–669, illus. 1931.
Literature cited, p. 669.
"Choice cottonseed meal containing 43 percent crude protein was used in these experiments. The autoclaved meal was prepared in the laboratory by cooking the meal under 25 pounds of steam pressure for 30 minutes."

HOSKING, F. J. (839)
FEEDS COMMERCIALLY PRODUCED HAVE WIDE DISTRIBUTION IN U.S. Yearbook 1928: 286–288. 1929.
"Consumption of cottonseed cake and meal as feed totaled nearly 2,000,000 tons in 1926 and 1927, and about 1,500,000 tons in 1927–28."

LINDSEY, J. B., BEALS, C. L., and ARCHIBALD, J. G. (840)
THE DIGESTIBILITY AND ENERGY VALUES OF FEEDS FOR HORSES. Jour. Agr. Research 32: 569–604, illus. 1926.
Literature cited, pp. 603–604.
Cottonseed meal, pp. 586–587, 597.

MITCHELL, H. H., and HAMILTON, T. S. (841)
THE NUTRITIVE VALUE FOR GROWING SWINE OF THE PROTEINS OF LINSEED MEAL AND OF COTTONSEED MEAL, BOTH ALONE AND IN COMBINATION WITH THE PROTEINS OF CORN. Jour. Agr. Research 43: 743–748, illus. 1931.
Literature cited, p. 748.
Tables are included.

SHEETS. E. W., and THOMPSON, E. H. (842)
FEEDING COTTONSEED PRODUCTS TO LIVESTOCK. Farmers' Bull. 1179 (rev. ed.), 14 pp., illus. 1930.
Issued Nov. 1920; revised April 1924 and December 1930. Supersedes Farmers' Bulletin 655, Cottonseed Meal for Feeding Beef Cattle, by W. F. Ward, 1915.
Composition of cottonseed products, table 1 (p. 2); quantities of products yielded by a ton of cottonseed, p. 2 (linters, hulls, cake or meal, crude oil, dirt and loss in manufacture); grades and classes of cottonseed products, pp. 2–3. Includes definition of cottonseed cake, meal, hulls, and cottonseed-hull bran.

TAYLOR, C. W. (843)
IMPORTANCE OF RAISING AND FEEDING MORE CATTLE AND SHEEP. Dept. Agr. Rpt. 1864: 249–288, illus. 1865.
Discussion of cottonseed meal, pp. 275–276. "In the albuminous, or flesh-forming portions, it far exceeds the best English or American linseed meal. The same qualities make it most excellent feed for milch cows and we have, by repeated experiments, proved that for the production of milk it is worth just about double corn-meal, pound for pound."

WARD, W. F., JERDAN, S. S., and LLOYD, E. R. (844)
A COMPARISON OF CONCENTRATES FOR FATTENING STEERS IN THE SOUTH. Dept. Bull. 761, 16 pp., illus. 1919.
I. The comparative value of cottonseed meal, cold-pressed cottonseed cake, and a mixture of cottonseed meal and corn for fattening steers. II. A comparison of cottonseed meal, cottonseed meal and broken-ear corn, and cottonseed meal and shelled corn for fattening steers.

GOSSYPOL CONTENT AND TOXICITY

DOWELL, C. T., and MENAUL, PAUL. (845)
EFFECT OF AUTOCLAVING UPON THE TOXICITY OF COTTONSEED MEAL. Jour. Agr. Research 26: 9–10. 1923.
Results of a series of feeding experiments carried on with young pigs at the Oklahoma Agricultural Experiment Station. "These experiments seem to show (1) that autoclaving cottonseed meal destroys the poison peculiar to it (2) that different lots of the meal contain different amounts of the poison. Further work will have to be done to determine whether it is the high temperature that destroys the poison or oxidation by the oxygen of the air during the drying."

GALLUP, W. D. (846)
A CHEMICAL STUDY OF THE DEVELOPMENT OF COTTON BOLLS AND THE RATE OF FORMATION OF GOSSYPOL IN THE COTTON SEED. Jour. Agr. Research 36: 471–480, illus. 1928.
Literature cited, p. 480.

——— (847)
THE GOSSYPOL CONTENT AND CHEMICAL COMPOSITION OF COTTONSEEDS DURING CERTAIN PERIODS OF DEVELOPMENT. Jour. Agr. Research 34: 987–992, illus. 1927.
Literature cited, pp. 991–992.
"The greatest change in the composition of the seeds over the range studied occurred at the time the boll was mature and about to crack, from which time until the boll opened the gossypol content increased rapidly and continued to increase for some time thereafter. This increase in gossypol was greater than the increase of any of the other constituents, all of which showed only small increases after the boll had opened. No correlation was found between the formation of oil and the formation of gossypol."

MENAUL, PAUL (848)
THE PHYSIOLOGICAL EFFECT OF GOSSYPOL. Jour. Agr. Research 26: 233–237, illus. 1923.
Literature cited, p. 237.
Experiments were made with rabbits, sheep, and fish. "Gossypol causes death in animals by reducing the oxygen-carrying capacity of the blood. Thus an excessive burden is thrown on the respiratory and circulatory organs which results in the condition found in animals that have died from gossypol or cottonseed meal poisoning—namely, a passive hyperemia and oedema of the lungs and some hydrothorax. These conditions are always present and are not due to bacterial infection."

ROMMEL, G. M., and VEDDER, E. B. (849)
BERIBERI AND COTTONSEED POISONING IN PIGS [PRELIMINARY NOTE]. Jour. Agr. Research 5: 489–493. 1915.

SCHWARTZE, E. W., and ALSBERG, C. L. (850)
PHARMACOLOGY OF GOSSYPOL. Jour. Agr. Research 28: 191–198, illus. 1924.
Literature cited, p. 197.
Results of "investigation upon the toxicity of gossypol for cats, together with some additional observations on rabbits, guinea pigs, rats, and mice, are here presented."

SCHWARTZE, E. W., and ALSBERG, C. L. (851)
QUANTITATIVE VARIATION OF GOSSYPOL AND ITS RELATION TO THE OIL CONTENT OF COTTONSEED. Jour. Agr. Research 25: 285–295, illus. 1923.
Literature cited, p. 295.
"The gossypol content appears to depend upon factors other than varietal factors. If a varietal influence exists, practically it is masked. A variation of 200 percent was found in samples of one variety from the same plantation, but from crops of different years. * * * The variation in the gossypol content was fairly regular in that it tended to vary directly with and bore a true relationship to the oil content. This was true for all seeds from any one region, regardless of the regional tendency."

——— and ALSBERG, C. L. (852)
RELATION BETWEEN TOXICITY OF COTTONSEED AND ITS GOSSYPOL CONTENT. Jour. Agr. Research 28: 173–189, illus. 1924.
Literature cited, pp. 188–189.
"Rats were fed upon a totally adequate diet to which were added in some cases known quantities of gossypol and in other cases raw cottonseed kernels in which the gossypol content had been determined. The toxicity of these diets with moderate variations corresponded to their gossypol content."

SHERWOOD, F. W. (853)
STUDIES ON GOSSYPOL: THE GOSSYPOL AND d-GOSSYPOL CONTENT OF SOME NORTH CAROLINA COTTONSEED MEALS. Jour. Agr. Research 32: 793–800, illus. 1926.
Literature cited, p. 800.

WITHERS, W. A., and CARRUTH, F. E. (854)
COMPARATIVE TOXICITY OF COTTONSEED PRODUCTS. Jour. Agr. Research. 14: 425–452, illus. 1918.
Literature cited, pp. 451–452.
In this paper are reported "some of the experiments conducted to ascertain to what extent the change in toxicity takes place under oil-mill conditions. These experiments led to the conclusion that there still remained a toxic factor in all the samples of cottonseed meal and cottonseed flour [which were fed]. Rats and hens are less affected by this factor than rabbits and swine. In fact, in diets well supplemented with milk powder the toxic factor for rats may remain entirely masked" (p. 426). In the experiments various cottonseed products, including raw cottonseed kernels, ether-extracted kernels, gossypol, and several meals, were fed to rats, rabbits, poultry, and swine.

——— and CARRUTH, F. E. (855)
GOSSYPOL, THE TOXIC SUBSTANCE IN COTTONSEED. Jour. Agr. Research 12: 83–102, illus. 1918.
Literature cited, pp. 100–101.
"Inasmuch as no comparative experiments with an isolated and purified substance have been reported, we present the results of additional experiments with various animals to supplement those given in our previous experiments, in which rabbits and fowls were used." Review of previous work, p. 83. Experiments were conducted with rats, rabbits, and pigs. "Cottonseed meal is much less toxic than raw cottonseed, owing mainly to the oxidation of gossypol during cooking. * * * Outdoor exercise, access to forage and soil, and improved diets tend to postpone or avert cottonseed-meal poisoning of swine. The deficiency hypothesis that cottonseed-meal poisoning of swine is similar to beriberi is untenable."

——— and CARRUTH, F. E. (856)
GOSSYPOL, THE TOXIC SUBSTANCE IN COTTONSEED MEAL. Jour. Agr. Research 5: 261–288, illus. 1915.
Literature cited, pp. 287–288.
This paper is the third in a series of Studies in Cottonseed Meal Toxicity. Study I, Withers and Ray (1913), is a criticism of Crawford's pyrophosphoric-acid hypothesis; Study II, Withers and Brewster (1913) suggests iron salts as an antidote. (Footnote, p. 261.) Study I appeared in Jour. Biol. Chem. 14 (2): 53–58, 1913. Study II appeared in Jour. Biol. Chem. 15 (1): 161–166, 1913.

LEGISLATION AND REGULATION

COTTONSEED AND LINTERS

UNITED STATES DEPARTMENT OF AGRICULTURE. BUREAU OF AGRICULTURAL ECONOMICS. (857)
OFFICIAL STANDARDS OF THE UNITED STATES FOR AMERICAN COTTON LINTERS. Serv. and Regulat. Announc. 94, 9 pp. 1925.
American cotton linters, by G. S. Meloy, pp. 3–7.

——— BUREAU OF AGRICULTURAL ECONOMICS. (858)
THE OFFICIAL STANDARDS OF THE UNITED STATES FOR THE GRADING, SAMPLING, AND ANALYZING OF COTTONSEED SOLD OR OFFERED FOR SALE FOR CRUSHING PURPOSES. EFFECTIVE JUNE 1932. Serv. and Regulat. Announc. 133. 10 pp. 1932.

FUTURES TRADING

UNITED STATES DEPARTMENT OF AGRICULTURE. BUREAU OF AGRICULTURAL ECONOMICS. (859)
ITEMS RELATING TO THE ADMINISTRATION OF THE UNITED STATES COTTON FUTURES AND COTTON STANDARDS ACTS. Serv. and Regulat. Announc. 109, 13 pp. 1928.
Act authorizing the Secretary of Agriculture to collect and publish statistics of the grade and staple length of cotton, pp. 12–13.

——— BUREAU OF AGRICULTURAL ECONOMICS. (860)
REGULATIONS OF THE SECRETARY OF AGRICULTURE UNDER THE UNITED STATES COTTON FUTURES ACT. EFFECTIVE MAY 1, 1931. Serv. and Regulat. Announc. 124, 22 pp. 1931.
Supersedes Serv. and Regulat. Announc. 105. 1927.
Amendments 1–2, 1931.

——— OFFICE OF MARKETS AND RURAL ORGANIZATION. (861)
DETERMINATION OF DISPUTES ON QUESTIONS OTHER THAN GRADE ARISING IN CONNECTION WITH THE FIFTH SUBDIVISION OF SECTION 5 OF THE UNITED STATES COTTON FUTURES ACT. Serv. and Regulat. Announc. 2, 13–15 pp. 1915.

——— OFFICE OF MARKETS AND RURAL ORGANIZATION. (862)
[INFORMATION RELATING TO THE U.S. COTTON FUTURES ACT] Serv. and Regulat. Announc. 3, 6 pp. 1915.

——— OFFICE OF MARKETS AND RURAL ORGANIZATION. (863)
Serv. and Regulat. Announc. 4, 23–49 pp. 1915.
[INFORMATION RELATING TO THE U.S. COTTON FUTURES ACT.]
Opinions of general interest regarding questions arising under the United States Cotton Futures Act, pp. 30–48.

——— OFFICE OF MARKETS AND RURAL ORGANIZATION. (864)
[INFORMATION RELATING TO THE U.S. COTTON FUTURES ACT] Serv. and Regulat. Announc. 5, 51–80 pp., illus. 1915.
The United States Cotton Futures Act, by F. G. Caffey, pp. 51–66. (Address delivered before the Alabama State Bar Association at Montgomery, Ala., July 10, 1915).—Opinions of general interest.

——— OFFICE OF MARKETS AND RURAL ORGANIZATION. (865)
[INFORMATION RELATING TO THE U.S. COTTON FUTURES ACT] Serv. and Regulat. Announc. 8, 51–95 pp., illus. 1916.
Contents: Necessity for adequately designating by letters, marks, or lot numbers the bales involved in disputes. The determination of disputes. Record of disputes, 1915, arranged by dispute number, tables (pp. 59–95).

——— OFFICE OF MARKETS AND RURAL ORGANIZATION. (866)
[ITEMS RELATING TO THE U.S. COTTON FUTURES ACT] Serv. and Regulat. Announc. 9, 97–117 pp., illus. 1916.
Includes a review of some of the provisions of the pending cotton futures bill, H.R. 11861, and of causes of differences between prices of Middling cotton in New York and Liverpool; charts of comparative price variations, 1913, 1914, 1915, showing "the fact that the cotton futures Act has accomplished the results intended by its framers."

——— OFFICE OF MARKETS AND RURAL ORGANIZATION. (867)
[ITEMS RELATING TO THE U.S. COTTON FUTURES ACT] Serv. and Regulat. Announc. 10, 119–134 pp. 1916.

UNITED STATES DEPARTMENT OF AGRICULTURE. OFFICE OF MARKETS AND RURAL ORGANIZATION. (867)
[ITEMS RELATING TO THE U.S. COTTON FUTURES ACT] Serv. and Regulat. Announc. 16, 15 pp., illus. 1916.
A comparison of the official cotton standards of the United States for grade with the Liverpool standards (pp. 13–15). Tables.

REGULATION OF PRICES

EDMINSTER, L. R., SCHABEN, L. J., and LYNSKY, MYER. (869)
AGRICULTURAL PRICE-SUPPORTING MEASURES IN FOREIGN COUNTRIES. Bur. Agr. Econ., Foreign Agr. Serv. F. S. 56, 294 pp. 1932. [Mimeographed.]
"A descriptive summary of recent and present agricultural price-supporting measures in foreign countries. In general the measures discussed are such as have involved more or less intervention on the part of governments." Measures relating to cotton are included.

LACY, M. G., HANNAY, A. M., and DAY, E. L., compilers. (870)
PRICE FIXING BY GOVERNMENTS 424 B.C.—1926 A.D. A SELECTED BIBLIOGRAPHY, INCLUDING SOME REFERENCES ON THE PRINCIPLES OF PRICE FIXING, AND ON PRICE FIXING BY PRIVATE ORGANIZATIONS. Bur. Agr. Econ. Libr., Agr. Econ. Bibliog. 18, 149 pp. 1926. [Mimeographed.]
For references to cotton see the index.

UNITED STATES DEPARTMENT OF AGRICULTURE. BUREAU OF AGRICULTURAL ECONOMICS. (871)
STATEMENT OF LLOYD S. TENNY . . . SUBMITTED TO THE SUBCOMMITTEE OF THE COMMITTEE ON AGRICULTURE AND FORESTRY, UNITED STATES SENATE, 70TH CONGRESS, 1ST SESSION HEARINGS PURSUANT TO SENATE RESOLUTION 142, A RESOLUTION TO INVESTIGATE THE RECENT DECLINE IN COTTON PRICES, APRIL 26, 1928. 42 pp. [1928] [Mimeographed.]

——— BUREAU OF AGRICULTURAL ECONOMICS. (872)
THE WORLD CARRY-OVER AND CONSUMPTION OF AMERICAN COTTON. STATEMENT OF LLOYD S. TENNY . . . TO THE SENATE SUBCOMMITTEE INVESTIGATING THE DECLINE IN COTTON PRICES, SUBMITTED FOR THE RECORD, MAY 7, 1928. 20 pp. [1928] [Mimeographed.]

REGULATION OF PRODUCTION

BENTON, M. C., compiler. (873)
COTTON SURPLUS RELIEF PLANS. SOME REFERENCES TO COMMENT ON THE SUBJECT. 1930–DATE. 11 pp. Bur. Agr. Econ. [1932] [Mimeographed.]

BERCAW, L. O., compiler. (874)
THE DOMESTIC ALLOTMENT PLANS FOR THE RELIEF OF AGRICULTURE. SELECTED REFERENCES. Bur. Agr. Econ. Libr., Agr. Econ. Bibliog. 41, 48 pp. 1933. [Mimeographed.]
For references to cotton see the index.

EDWARDS, E. E. (875)
MEMORANDUM CONCERNING THE CAMPAIGNS IN 1905, 1915, 1921, AND 1927 TO DECREASE THE COTTON ACREAGE. 8 pp. Bur. Agr. Econ. [1930.] [Mimeographed.]

EZEKIEL, MORDECAI. (876)
KINDS OF AGRICULTURAL SURPLUSES. 12 pp., illus. Bur. Agr. Econ., 1927. [Mimeographed.]
Address before Section O, American Association for the Advancement of Science, Philadelphia, Pa., December 30, 1926.
The cotton crop is used as an illustration of the discussion. "The surpluses which are due to inadequacies of the marketing arrangements may be grouped according to the time and space involved into day-to-day surpluses, short-time surpluses, seasonal surpluses, and crop-year surpluses. * * * The possibility of increasing returns by holding part of the supply over from one crop year to another depends upon four major factors: (1) The expenses involved in storing; (2) the probable future changes in price if only the usual quantity is put into storage; (3) the probable effect upon price at the time of withdrawing the stored supply from the market; (4) the effect upon price at the time of selling the stored supply. These last two points differ when the question is re-

garded from the point of view of storing by individuals or of storing by a whole group of organized producers, and each would have to be considered separately." Relation between world supplies of American cotton and average price for the season, fig. 4. Relation between price of cotton and carry-over into next season, fig. 5.

HANNAY, A. M., compiler. (877)

CONTROL OF PRODUCTION OF AGRICULTURAL PRODUCTS BY GOVERNMENTS. A SELECTED BIBLIOGRAPHY. Bur. Agr. Econ. Libr., Agr. Econ. Bibliog. 23, 88 pp. 1927. [Mimeographed.]

"By control of production is meant, in general, direct limitation of output, although a few instances are given in which limitation of production is the result of monopoly of trade or of price fixing." Cotton, pp. 2–16.

UNITED STATES DEPARTMENT OF AGRICULTURE. (878)

SURPLUS FARM PRODUCTS. LETTER FROM THE SECRETARY OF AGRICULTURE TO SENATOR SIMEON D. FESS, SUBMITTING INFORMATION AND CHARTS ON THE HANDLING OF SURPLUS FARM PRODUCTS AND A COOPERATIVE PLAN THEREON. U.S.Cong., 69th, 1st sess., Senate Doc. 125, 20 pp., illus. 1926.

A discussion of the cotton surplus is included.

——— AGRICULTURAL ADJUSTMENT ADMINISTRATION. (879)

THE AGRICULTURAL ADJUSTMENT ACT APPLIED TO COTTON. 4 pp. 1933.

STANDARDS

COBB, N. A. (880)

MEMORANDUM OF INFORMATION CONCERNING OFFICIAL COTTON GRADES. Bur. Plant Indus. Doc. 720, 3 pp. 1912.

Short notes on method of preparation and on the act governing the sale of official types; the names of the advisory committee are listed.

TENNY, L. S. (881)

NATIONAL STANDARDS FOR FARM PRODUCTS. Circ. 8 (rev. ed.), 52 pp., illus. 1930.

Issued 1927; revised, 1930, by Caroline B. Sherman.

Cotton, pp. 8–12. Cotton linters, pp. 12–13. List of standards for cotton formulated by the Bureau of Agricultural Economics, as of 1930, p. 49.

UNITED STATES DEPARTMENT OF AGRICULTURE. BUREAU OF AGRICULTURAL ECONOMICS. (882)

PROCEEDINGS OF THE INTERNATIONAL UNIVERSAL COTTON STANDARDS CONFERENCE . . . 1929. 1931. 1933. 1929–1933. [Mimeographed.]

Title varies. Proceedings of the 1929 conference are also contained in Serv. and Regulat. Announc. 117.

For history of the conference, see Serv. and Regulat. Announc. 82 and 92.

The Division of Cotton Marketing has a typewritten copy of proceedings for the conferences of 1923, 1925, and 1927.

——— BUREAU OF AGRICULTURAL ECONOMICS. (883)

PROCEEDINGS OF INTERNATIONAL UNIVERSAL COTTON STANDARDS CONFERENCE OF 1929 AND ITEMS RELATING TO THE ADMINISTRATION OF THE UNITED STATES COTTON FUTURES AND COTTON STANDARDS ACTS. Serv. and Regulat. Announc. 117, 23 pp. 1929.

Act relating to investigation of new uses of cotton (approved Apr. 12, 1928, 45 Stat.L. 426), pp. 22–23.

Amendment, July 30, 1932.

Supplement no. 1. Determinations of Staple Length (3 pp. Apr. 10, 1933). [Mimeographed.]

——— BUREAU OF AGRICULTURAL ECONOMICS. (884)

REGULATIONS OF THE SECRETARY OF AGRICULTURE UNDER THE UNITED STATES COTTON STANDARDS ACT. EFFECTIVE MAY 1, 1931. Serv. and Regulat. Announc. 125, 23 pp. 1931.

Supersedes Serv. and Regulat. Announc. 115, 1928.

Amendments 1–4, 1931–1933. [Mimeographed.]

UNITED STATES DEPARTMENT OF AGRICULTURE. BUREAU OF AGRICULTURAL ECONOMICS. (885)

REPORT OF CONFERENCE CALLED AT WASHINGTON, D.C., FOR THE CONSIDERATION OF TENTATIVE REGULATIONS OF THE SECRETARY OF AGRICULTURE UNDER THE U.S. COTTON STANDARDS ACT, APRIL 8–10, 1923. 88 pp. 1923. [Mimeographed.]

——— BUREAU OF AGRICULTURAL ECONOMICS. (886)

STANDARDS FOR COTTON CLASSIFICATION IN THE UNITED STATES AND ABROAD. Serv. and Regulat. Announc. 92, 23 pp., illus. 1925.

Prepared by C. L. Finch, supervisor of administration, United States Cotton Futures and Cotton Standards Acts. This pamphlet was published to bring up to date and supplement the information given in Serv. and Regulat. Announc. 82. 1924.

American cotton in export trade—formal action of the European cotton exchanges in adopting official cotton standards of the United States for grades and colors of American upland cotton as universal standards, pp. 12–17. Original and supplemental agreement, pp. 17–20.

Public notice establishing the grades constituting the official standards of the United States for American cotton linters, pp. 10–11. Amendment. 1928. [Mimeographed.]

——— BUREAU OF AGRICULTURAL ECONOMICS. (887)

UNITED STATES COTTON STANDARDS ACT. A PAMPHLET CONTAINING QUESTIONS AND ANSWERS ON THE COTTON STANDARDS ACT OF 1923. 12 pp. 1924. [Mimeographed.]

——— BUREAU OF AGRICULTURAL ECONOMICS. DIVISION OF COTTON MARKETING. (888)

HANDBOOK FOR LICENSED CLASSIFIERS (U.S. COTTON STANDARDS ACT). 30 pp. 1931. [Mimeographed.]

Issued 1930; revised 1931.

——— BUREAU OF AGRICULTURAL ECONOMICS. DIVISION OF COTTON MARKETING. (889)

HANDBOOK FOR SUPERVISORS OF COTTON INSPECTION (UNITED STATES COTTON FUTURES ACT AND UNITED STATES COTTON STANDARDS ACT). 11 pp. 1931. [Mimeographed.]

——— BUREAU OF AGRICULTURAL ECONOMICS. DIVISION OF COTTON MARKETING. (890)

STAPLE STANDARDS CONFERENCE JULY 18–JULY 21, 1932. 22 pp. [1932.] [Mimeographed.]

The conference was held in Washington, D.C., and attended by representatives of the cotton trade and of the Bureau of Agricultural Economics.

——— BUREAU OF MARKETS. (891)

[ITEMS RELATING TO THE OFFICIAL COTTON STANDARDS.] Serv. and Regulat. Announc. 41, 16 pp., illus. 1919.

Includes public notices establishing official cotton standards of the United States for American Egyptian cotton and for sea-island cotton.—Public notice establishing official cotton standards of the United States for length of staple.—History of standards of American Egyptian and sea-island cotton.—Photographs showing method of pulling staple, pp. 12–16.

Amendment. 1924. [Mimeographed.]

——— BUREAU OF MARKETS AND CROP ESTIMATES. (892)

UNIVERSAL STANDARDS FOR AMERICAN COTTON WITH A BRIEF HISTORY OF THE MOVEMENT TO SECURE UNIVERSAL COTTON STANDARDS. THE UNITED STATES DEPARTMENT OF AGRICULTURE. 34 pp. [1921.] [Mimeographed.]

French and German editions also were issued.

——— OFFICE OF MARKETS AND RURAL ORGANIZATION. (893)

BRIEF HISTORY OF THE MOVEMENT TO SECURE UNIVERSAL COTTON STANDARDS. Serv. and Regulat. Announc. 7, 50 pp., illus. 1916.

——— OFFICE OF MARKETS AND RURAL ORGANIZATION. (894)

ESTABLISHMENT AND PROMULGATION OF OFFICIAL COTTON STANDARDS OF THE UNITED STATES. Serv. and Regulat. Announc. 1, 11 pp. 1915.

UNITED STATES DEPARTMENT OF AGRICULTURE. OFFICE OF MARKETS AND RURAL ORGANIZATION. (895)

THE OFFICIAL COTTON STANDARDS OF THE UNITED STATES. Serv. and Regulat. Announc. 6, 32 pp., illus. 1916.

"A full description of the work and equipment of the Office of Markets and Rural Organization in connection with the standards." Includes detailed illustrations of standard boxes; arrangement of the cotton in glass tubes for preservation; mechanical equipment used in the evacuation of vacuum tubes; skylight in grading room. Holders of sets of standards, listed by States (pp. 22–32).

REGULATION OF WAREHOUSING

UNITED STATES DEPARTMENT OF AGRICULTURE. BUREAU OF AGRICULTURAL ECONOMICS. (896)

REGULATIONS OF THE SECRETARY OF AGRICULTURE UNDER THE UNITED STATES WAREHOUSE ACT OF AUGUST 11, 1916 AS AMENDED. REGULATIONS FOR WAREHOUSEMEN STORING COTTONSEED FOR COMMERCIAL BUT NOT FOR SEED STOCK PURPOSES. APPROVED AUGUST 24, 1926. ISSUED SEPTEMBER 1926. Serv. and Regulat. Announc. 102, 35 pp. 1926.

Amendments 1, 2. 1927, 1929. [Mimeographed.]

——— BUREAU OF AGRICULTURAL ECONOMICS. (897)

REVISED REGULATIONS FOR COTTON WAREHOUSES. APPROVED APRIL 27, 1931. REGULATIONS OF THE SECRETARY OF AGRICULTURE UNDER THE UNITED STATES WAREHOUSE ACT OF AUGUST 11, 1916 AS AMENDED. ISSUED JUNE 1931. Serv. and Regulat. Announc. 126, 23 pp. 1931.

——— BUREAU OF MARKETS. (898)

COMPLETE LISTS OF WAREHOUSEMEN, CLASSIFIERS, INSPECTORS, GRADERS, AND WEIGHERS LICENSED UNDER THE UNITED STATES WAREHOUSE ACT. LISTS OF LICENSES ISSUED PRIOR TO APRIL 1, 1921. Serv. and Regulat. Announc. 68, 26 pp. 1921.

List of cotton warehousemen, classifiers, and weighers licensed prior to April 1, 1921, pp. 2–16.

——— BUREAU OF MARKETS. (899)

INFORMATION CONCERNING THE UNITED STATES WAREHOUSE ACT. Serv. and Regulat. Announc. 61, 36 pp., illus. 1920.

Illustrations of forms of cotton warehouse receipts are included.

MISCELLANEOUS REGULATIONS

(900)

UNITED STATES DEPARTMENT OF AGRICULTURE. FEDERAL HORTICULTURAL BOARD. COMPENSATION ON ACCOUNT OF NONCOTTON ZONES.—JOINT RESOLUTION OF CONGRESS AND REGULATIONS. (EFFECTIVE ON AND AFTER APRIL 1, 1922). PUBLIC RESOLUTION NO. 12. U.S. Cong., 67th [S.J.Res. 72], 2 pp. 1922.

Amendment, 1924.

——— PLANT QUARANTINE AND CONTROL ADMINISTRATION. (901)

SERV. AND REGULAT. ANNOUNC. 1–105. 1914–1932.

Nos. 1–95 were issued by the Federal Horticultural Board.

Items regarding the importation of cotton lint, linters, cottonseed, and legislation concerning the pink bollworm are included in this series.

WELLS, C. F. (902)

TARIFF RATES ON REPRESENTATIVE AGRICULTURAL PRODUCTS UNDER TARIFF ACTS OF 1930 AND 1922. 44 pp. Bur. Agr. Econ. 1931. [Mimeographed.]

Cotton, p. 32, cottonseed, p. 10, cottonseed oil, p. 8, cotton waste, p. 32.

RESEARCH PROGRAMS

FETROW, W. W. (903)

COTTON RESEARCH PROGRAM OF THE UNITED STATES DEPARTMENT OF AGRICULTURE AS AN AID TO COTTON COOPERATIVES * * * ADDRESS AT THE OKLAHOMA COOPERATIVE MARKETING SCHOOL, STILLWATER, OKLAHOMA, FEBRUARY 19, 1929. 11 pp., illus. Bur. of Agr. Econ. [1929] [Mimeographed.]

UNITED STATES DEPARTMENT OF AGRICULTURE. BUREAU OF AGRICULTURAL ECONOMICS. (904)
RESEARCH IN PROGRESS IN THE BUREAU OF AGRICULTURAL ECONOMICS JULY 1, 1932. PREPARED FOR THE USE OF RESEARCH WORKERS IN THE BUREAU OF AGRICULTURAL ECONOMICS, THE STATE AGRICULTURAL COLLEGES AND EXPERIMENT STATIONS, AND OTHER RESEARCH AGENCIES IN AGRICULTURAL ECONOMICS. 102 pp. 1932. [Mimeographed.]

——— COTTON RESEARCH COORDINATION COMMITTEE. (905)
LIST OF RESEARCH PROJECTS PERTAINING TO COTTON, INDICATING OBJECTIVES, ESTIMATED SUPPORT AND AVAILABLE PUBLICATIONS. 59 pp. 1929. [Mimeographed.]

——— COTTON RESEARCH COORDINATION COMMITTEE. (906)
MINUTES OF THE THIRD MEETING OF THE COTTON RESEARCH COORDINATION COMMITTEE. 5 pp. [1930] [Mimeographed.]

YOUNGBLOOD, BONNEY. (907)
THE CORRELATION OF RESEARCH IN COTTON MARKETING * * * ADDRESS DELIVERED BEFORE THE GENERAL SESSION OF THE ASSOCIATION OF SOUTHERN AGRICULTURAL WORKERS, AT MEMPHIS, TENNESSEE, FEBRUARY 2, 1928. 11 pp. Bur. Agr. Econ. [1928] [Mimeographed.]
Describes the program of the Division of Cotton Marketing, Bureau of Agricultural Economics, United States Department of Agriculture.

——— (908)
THE NECESSITY FOR BETTER CORRELATION OF RESEARCH ACTIVITIES IN THE FIELD OF AGRICULTURE WITH SPECIAL REFERENCE TO COTTON GROWING. 16 pp. Off. Expt. Sta. [1930] [Mimeographed.]
Presented before the Association of Southern Agricultural Workers, Jackson, Miss., February 5, 1930.

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THE RESEARCH PROGRAM OF THE DIVISION OF COTTON MARKETING. 9 pp. Bur. Agr. Econ., 1927. [Mimeographed.]
"The program, as now under way, may be outlined as follows: (1) Studies having to do with the spinning utility, or utilities, of the annual supply of American cotton * * * (2) studies of the consumption of cotton * * * (3) studies of the cotton markets themselves."

STUDY AND TEACHING

LANE, C. H. (910)
LESSONS ON COTTON FOR THE RURAL COMMON SCHOOLS. Dept. Bull. 294, 16 pp., illus. 1915.
Designed to supplement organized school work.

MERRILL, F. A. (911)
LESSONS ON COTTON FOR ELEMENTARY SCHOOLS. Misc. Circ. 43, 27 pp., illus. 1925.
"Intended as aids in teaching the subject in the seventh or eighth grades of elementary schools. * * * The lessons furnish only special features of the subject and are not intended to be exhaustive" (p. 1).

GENERAL BIBLIOGRAPHIES AND INDEXES

BRADLEY, M. A., and HUNT, M. G. (912)
INDEX TO PUBLICATIONS OF THE UNITED STATES DEPARTMENT OF AGRICULTURE, 1901–25. 2689 pp. 1932.
Covers all the publications of the United States Department of Agriculture for the period given with the exception of the periodicals issued by the Bureaus. The Journal of Agricultural Research and the News Letter, later called the Official Record, are included (p. 1).

DAY, E. L., compiler. (913)
COTTON LITERATURE; SELECTED REFERENCES.. PREPARED IN THE LIBRARY OF THE UNITED STATES DEPARTMENT OF AGRICULTURE WITH THE COOPERATION OF THE BUREAU OF AGRICULTURAL ECONOMICS, BUREAU OF PLANT INDUSTRY AND BUREAU OF ENTOMOLOGY. January 1931—date, monthly. [Mimeographed.]
Superseded Current Literature on Cotton; Selected References, July–December 1930. [Mimeographed.]

EDWARDS, E. E., compiler. (914)
A BIBLIOGRAPHY OF THE HISTORY OF AGRICULTURE IN THE UNITED STATES. Misc. Pub. 84, 307 pp. 1930.
For references to cotton see the index.

HAWKS, E. B., compiler. (915)
COTTON: PARTIAL LIST OF PUBLICATIONS IN ENGLISH EXCLUSIVE OF PUBLICATIONS ON DISEASES AND PESTS AND PUBLICATIONS OF THE STATE EXPERIMENT STATIONS. Agr. Libr. Notes 1 (6) Sup., 12 pp. [1926.] [Mimeographed.]

OGDEN, E. L., and HAWKS, E. B., compilers. (916)
LIST OF MANUSCRIPT BIBLIOGRAPHIES AND INDEXES IN THE U.S. DEPARTMENT OF AGRICULTURE INCLUDING SERIAL MIMEOGRAPHED LISTS OF CURRENT LITERATURE. Libr. Bibliog. Contrib. 11, 38 pp. 1926. [Mimeographed.]
Item 34 (p. 7), Cotton: Breeding and genetics of cotton. Approximately 500 entries by author. Fairly complete since 1910. (T. H. Kearney, Bureau of Plant Industry.)—Item 94 (p. 14), Southern field crop insects, e.g. cotton, tobacco, sugarcane, rice. A fairly complete bibliography of American and foreign species filed by author and by insect species, up to date. (J. L. Webb, Bureau of Entomology).

WARNER, M. F., compiler. (917)
COTTON: PARTIAL LIST OF PUBLICATIONS IN ENGLISH EXCLUSIVE OF PUBLICATIONS ON DISEASES AND PESTS AND PUBLICATIONS OF THE STATE EXPERIMENT STATIONS 1926–28. Agr. Libr. Notes 4 (1–2) Sup., 5 pp. [1929.] [Mimeographed.]
A continuation of the original list with the same title, compiled by E. B. Hawks in 1926. (See item 915.)

APPENDIX

LIST OF DEPOSITORY LIBRARIES

The libraries listed have been designated by Congress to receive copies, as issued, of all publications printed by the Government for public distribution. These publications may be consulted by anyone during library business hours.

State or Territory	Place	Name of library
Ala.	Auburn	Alabama Polytechnic Institute.
	Birmingham	Howard College.
		M. Paul Phillips, Birmingham Southern College.
		Public.
	Florence	State Teachers College.
	Jacksonville	Do.
	Montgomery	Department of Archives and History, State Capitol.
		State and Supreme Court.
	Tuskegee Institute.	Hollis Burke Frissell.
	University	University of Alabama.
Alaska	College	Alaska Agricultural College and School of Mines.
	Juneau	Territorial Historical Library and Museum.
Ariz.	Jerome	Public.
	Phoenix	Do.
		State Law and Legislative Reference.
	Tucson	University of Arizona.
Ark.	Clarksville	College of the Ozarks.
	Conway	Hendrix College.
	Fayetteville	University of Arkansas.
	Jonesboro	State A. & M. College.
	Russellville	Arkansas Polytechnic College.
Calif.	Alturas	Modoc County Public.
	Berkeley	University of California.
	Claremont	Pomona College.
	Eureka	Eureka Free.
	Fresno	Fresno County Free.
	Los Angeles	Loyola University.
		Public.
		University of California.
		University of Southern California.
	Long Beach	Public.
	Oakland	Oakland Free.
	Pasadena	California Institute of Technology.
	Redlands	University of Redlands.
	Sacramento	California State.
		City Free.
	San Diego	Public.
	San Francisco	Mechanics Mercantile.
		Public.
	Santa Rosa	Free Public.
	Stanford University.	Stanford University.
	Stockton	Free Public.
Colo.	Boulder	University of Colorado.
	Colorado Springs	Colorado College Coburn.
	Denver	Colorado State.
		Public.
		Regis College.
		University of Denver.
	Fort Collins	State Agricultural College.
	Gunnison	Western State College.
	Pueblo	McClelland Public.
Conn.	Bridgeport	Bridgeport Public.
	Hartford	Connecticut State.
		Trinity College.
	Middletown	Wesleyan University.
	New Haven	Yale University.
	New London	Connecticut College.
	Storrs	Connecticut Agricultural College.
	Waterbury	Silas Bronson.
Del.	Dover	Delaware State.
	Newark	University of Delaware.
	Wilmington	Wilmington Institute Free.
D.C.	Washington	Army War College.
		Department of Agriculture.
		Department of Interior.
		Department of Justice.
		Naval Records and Library, Navy Department.
		Department of State.
		Treasury Department.
Fla.	De Land	Sampson Library of John B. Stetson University.
	Gainesville	University of Florida.
	Jacksonville	Public.
	Lakeland	Do.
	Tallahassee	Florida State.
	Winter Park	Rollins College.
Ga.	Athens	University of Georgia General.
	Atlanta	Carnegie.
		Georgia State.
	Augusta	Library of Richmond County Academy and Junior College of Augusta.
	Dahlonega	North Georgia Agricultural College.

State or Territory	Place	Name of library
Ga	Emory University.	Asa Griggs Candler Library of Emory University.
	Macon	Washington Memorial.
	Rome	Carnegie.
	Savannah	Public.
Hawaii	Honolulu	Library of Hawaii.
		University of Hawaii
Idaho	Albion	Albion State Normal.
	Boise	Carnegie Public.
		Idaho State Law.
	Caldwell	Strahorn Memorial Library of College of Idaho.
	Moscow	University of Idaho.
	Pocatello	University of Idaho, Southern Branch.
Ill	Belleville	Public.
	Bloomington	Illinois Wesleyan University.
	Carbondale	Wheeler Library, Southern Illinois State Normal University.
	Chicago	John Crerar.
		Museum of Science and Industry.
		Newberry.
		Public.
		St. Ignatius High School.
		University of Chicago.
	Danville	Public.
	Evanston	Northwestern University.
	Freeport	Public.
	Galesburg	Do.
	Jacksonville	MacMurray College.
		Public.
	Joliet	Do.
	Lisle	St. Procopius College.
	Monmouth	Monmouth College.
	Normal	Illinois State Normal University.
	Peoria	Public.
	Rockford	Do.
	Springfield	Illinois State.
	Urbana	University of Illinois.
Ind	Bloomington	Indiana University.
	Crawfordsville	Wabash College.
	Evansville	Public.
	Fort Wayne	Do.
	Greencastle	DePauw University.
	Hanover	Hanover College.
	Huntington	City Free.
	Indianapolis	Indiana State.
		Public.
	LaFayette	Purdue University.
	Muncie	Public.
	Notre Dame	University of Notre Dame.
	Richmond	Morrison-Reeves.
	Terre Haute	Indiana State Teachers College.
	Valparaiso	Valparaiso University.
Iowa	Ames	Iowa State College.
	Boone	Ericson Free Public.
	Cedar Falls	Public.
	Council Bluffs	Free Public.
	Des Moines	Iowa State.
		Public.
	Dubuque	Carnegie Stout Free Public.
	Fairfield	Free Public.
	Fayette	Upper Iowa University.
	Grinnell	Grinnell College.
	Iowa City	State University of Iowa.
	Lamoni	Graceland College.
	Mount Pleasant	Iowa Wesleyan College.
Iowa	Mount Vernon	Cornell College.
	Sioux City	Public.
Kans	Baldwin	Baker University.
	Emporia	Kellogg Library of Kansas State Teachers College.
	Hays	Forsyth Library of Fort Hays Kansas State College.
	Hiawatha	Morrill Free Public.
	Lawrence	University of Kansas.
	Manhattan	Kansas State College of Agriculture and Applied Sciences.
	Pittsburg	Public.
	Salina	Kansas Wesleyan University.
	Topeka	Kansas State.
		Kansas State Historical Society.
	Wichita	Morrison Library of the Municipal University of Wichita.
Ky	Danville	Center College.
	Frankfort	Kentucky State.
	Glasgow	Glasgow.
	Henderson	Public.
	Lexington	University of Kentucky.
	Lincoln Ridge	Lincoln Institute of Kentucky.
	Louisville	Free Public.
		University of Louisville.
	Murray	Murray State Teachers College.
	Somerset	Carnegie Public.
	Winchester	Kentucky Wesleyan College.
La	Baton Rouge	Louisiana State University.
		Louisiana State University Law.
	Natchitoches	Louisiana State Normal College.
	New Orleans	Howard Memorial.
		Louisiana State.
		Louisiana State Museum.
		Public.
		Tulane University.
	Ruston	Louisiana Polytechnic Institute.
	Shreveport	Shreve Memorial.
Maine	Augusta	Maine State.
	Bangor	Public.
	Brunswick	Bowdoin College.
	Lewiston	Bates College.
	Machias	Washington State Normal School.
	Orono	University of Maine.
	Portland	Public.
	Waterville	Colby College.
Md	Annapolis	Maryland State.
		United States Naval Academy.
	Baltimore	Enoch Pratt Free.
		Johns Hopkins University.
		Peabody Institute Library.
	Chestertown	Washington College.
	College Park	University of Maryland.
	Westminster	Western Maryland College.
Mass	Amherst	Converse Memorial Library of Amherst College.
		Massachusetts State College.

State or Territory	Place	Name of library
Mass.	Boston	Boston Athenaeum.
		Public.
		State Library of Massachusetts.
	Brookline	Public.
	Cambridge	Harvard College.
	Lynn	Public.
	New Bedford	Do.
	Salem	Essex Institute.
	Tufts College	Tufts College.
	Williamstown	Williams College.
	Worcester	American Antiquarian Society.
		Free Public.
Mich.	Ann Arbor	General Library of the University of Michigan.
	Battle Creek	Public School Library.
	Benton Harbor	Public.
	Detroit	Do.
		University of Detroit.
	East Lansing	Michigan State College of Agriculture and Applied Science.
	Grand Rapids	Public.
	Houghton	Michigan College of Mines and Tech.
	Kalamazoo	Public.
	Lansing	Michigan State.
	Muskegon	Hackley Public.
	Port Huron	Public.
	Saginaw	Hoyt Public.
Minn.	Cokato	H. C. Bull Memorial.
	Duluth	Public.
	Fergus Falls	Do.
	Minneapolis	Do.
		University of Minnesota.
	Northfield	Carleton College.
		St. Olaf College.
	St. Paul	Minnesota Historical Society.
		Minnesota State.
		Public.
	Stillwater	Carnegie Public.
Miss.	Columbus	J. C. Fant Memorial Library of Mississippi State College for Women.
	Jackson	Mississippi State.
	State College	Mississippi State College.
	University	University of Mississippi.
Mo.	Cape Girardeau	State Teachers College,
	Columbia	University of Missouri.
	Fulton	Westminster College.
	Hannibal	Free Public.
	Jefferson City	Missouri State.
	Kansas City	Public.
		Rockhurst College.
	Liberty	William Jewell College.
	Rolla	School of Mines and Metallurgy Library of University of Missouri.
	St. Joseph	Public.
	St. Louis	Do.
		St. Louis University.
		Washington University.
	Springfield	Drury College.
	Warrensburg	State Teachers College.
Mont.	Bozeman	Montana State College.
	Butte	Montana School of Mines.
	Helena	Historical Society of Montana.
		Public.
Mont.	Missoula	State University of Montana.
	Lewistown	Fergus County High School.
Nebr.	Blair	Dana College.
	Fremont	Midland College.
	Lincoln	Nebraska State.
		University of Nebraska.
	Omaha	Public.
	Scottsbluff	Carnegie Public.
Nev.	Carson City	Nevada State.
	Reno	University of Nevada.
N.H.	Concord	New Hampshire State.
	Dover	Public.
	Durham	Hamilton Smith Library of the University of New Hampshire.
	Hanover	Dartmouth College.
	Laconia	Public.
	Manchester	City.
N.J.	Atlantic City	Free Public.
	Bayonne	Do.
	Camden	Do.
	Elizabeth	Public.
	Jersey City	Free Public.
	Newark	Public.
	New Brunswick	Free Public.
		Rutgers University.
	Princeton	Princeton University.
	Trenton	Free Public.
		New Jersey State.
N. Mex.	Albuquerque	University of New Mexico.
	East Las Vegas	New Mexico Normal University.
	Santa Fe	State.
	Silver City	New Mexico State Teachers College.
	State College	New Mexico College of Agriculture and Mechanic Arts.
N.Y.	Albany	New York State.
	Brooklyn	Montague Branch of Brooklyn Public.
		Pratt Institute Free.
	Buffalo	Grosvenor.
		Public.
	Canton	St. Lawrence University.
	Farmingdale	State Institute of Applied Agriculture.
	Glens Falls	Crandall.
	Hamilton	Colgate University.
	Ithaca	Cornell University.
	Jamaica	Queens Borough Public.
	Keuka Park	Keuka College Public.
	Newburgh	Newburgh Free.
	New York	Astor Branch of New York Public.
		College of the City of New York.
		Columbia University.
		Cooper Union.
		Lenox Branch of New York Public.
		New York Law Institute.
		New York University.
	Rochester	University of Rochester.
	Schenectady	Union College.
	Syracuse	Syracuse University.
	Troy	Public.
	Utica	Do.
	West Point	United States Military Academy.
	Yonkers	Public.
N.C.	Chapel Hill	University of North Carolina.

State or Territory	Place	Name of library
N. C.	Charlotte	Queens College.
	Davidson	Library of Davidson College.
	Durham	Duke University.
	Raleigh	North Carolina State.
		North Carolina State College.
	Salisbury	Catawba College.
	Wake Forest	Wake Forest College.
	Washington	Public Schools.
	Wilson	Atlantic Christian College.
N. Dak.	Bismarck	State Historical.
		State Law.
	Fargo	North Dakota Agricultural College and Experiment Station.
	Grand Forks	University of North Dakota.
	Minot	State Teachers College.
	Valley City	Do.
Ohio	Alliance	Mount Union College.
	Athens	Ohio University, Edwin Watts Chubb Library.
	Bowling Green	Bowling Green State College.
	Bucyrus	Public.
	Chillicothe	Do.
	Cincinnati	Do.
		University of Cincinnati.
	Cleveland	Adelbert College Library of Western Reserve University.
		Case.
	Columbus	Ohio State.
		Ohio State University.
		Public.
	Dayton	Do.
	Delaware	Charles Slocum Library of Ohio Wesleyan University.
	Gambier	Kenyon College.
	Granville	Denison University.
	Hiram	Hiram College.
	Marietta	Marietta College.
	Oberlin	Oberlin College.
	Oxford	Miami University.
	Portsmouth	Public.
	Sidney	Do.
	Springfield	Warder Public.
	Toledo	Public.
	Van Wert	Brumback Library of Van Wert County.
	Youngstown	Public.
Okla.	Ada	East Central State Teachers.
	Alva	Northwestern State Teachers College.
	Durant	Southeastern Teachers College.
	Enid	Carnegie Public.
	Norman	University of Oklahoma.
	Oklahoma City	Oklahoma State.
	Shawnee	Oklahoma Baptist University.
	Stillwater	Agriculture and Mechanical College.
	Tahlequah	Northeastern State Teachers College.
	Tulsa	University of Tulsa.
Oreg.	Corvallis	Oregon Agricultural College.
	Eugene	University of Oregon.
	Forest Grove	Pacific University.
	Portland	Library Association of Portland.
		Reed College.
	Salem	Oregon State.
Pa.	Bethlehem	Lehigh University.
	Bradford	Carnegie Public.
	Carlisle	J. Herman Bosler Memorial.
	Erie	Public.
	Gettysburg	Gettysburg College.
	Harrisburg	Pennsylvania State.
	Haverford	Haverford College.
	Huntingdon	Juniata College.
	Lancaster	Watts De Peyster Library of Franklin & Marshall College.
	Meadville	Allegheny College.
	Philadelphia	Free.
		Mercantile.
		Philadelphia Library Co.
		Philadelphia Museum.
		University of Pennsylvania.
	Pittsburgh	Carnegie.
		Carnegie Free Library of Allegheny.
		University of Pittsburgh.
	Reading	Public.
	Scranton	Do.
	State College	Pennsylvania State College.
	Swarthmore	Swarthmore College.
	Warren	Warren Library Association.
	Washington	Memorial Library of Washington and Jefferson College.
	Williamsport	James V. Brown.
P. I.	Manila	National Library.
		University of the Philippines.
P. R.	Mayaguez	University of Puerto Rico, College of Agriculture and Mechanic Arts.
	Rio Piedras	University of Puerto Rico.
R. I.	Kingston	Rhode Island State College.
	Providence	Brown University.
		Public.
		Rhode Island State.
	Westerly	Public.
S. C.	Charleston	Charleston College.
		Charleston Library.
	Clemson College	Clemson College.
	Clinton	Presbyterian College.
	Columbia	South Carolina State.
		University of South Carolina.
	Greenwood	Public.
	Rock Hill	Carnegie Library of Winthrop College.
S. Dak.	Brookings	South Dakota State College of Agriculture and Mechanic Arts.
	Huron	Huron College.
	Mitchell	Dakota Wesleyan University.
	Pierre	South Dakota State.
	Sioux Falls	Carnegie Free Public.
	Yankton	Yankton College.
	Vermilion	University of South Dakota.
Tenn.	Chattanooga	Carnegie Public.
	Knoxville	University of Tennessee.
	Memphis	Cossitt.
	Murfreesboro	State Teachers College.
	Nashville	Carnegie.
		Tennessee State.
		Vanderbilt University.

State or Territory	Place	Name of library
Tenn.	Sewanee	University of the South.
Tex.	Austin	Texas State.
		University of Texas.
	Brownwood	Howard Payne College.
	Canyon	The West Texas State Teachers College.
	College Station	Agricultural and Mechanical College of Texas.
	Corsicana	Public.
	Dallas	Law Library, Southern Methodist University.
		Public.
	Denton	Texas State College for Women, College of Industrial Arts.
	El Paso	Public.
	Fort Worth	Carnegie Public.
		Texas Christian University.
	Galveston	Rosenberg.
	Georgetown	Southwestern University.
	Houston	Public.
	Port Arthur	Gates Memorial.
	San Antonio	Carnegie.
	Waco	Baylor University.
Utah.	Ephraim	Snow College.
	Logan	Utah State Agricultural College.
	Ogden	Carnegie Free.
	Provo	Brigham Young University.
	Salt Lake City	University of Utah.
		Utah State.
Vt.	Burlington	Fletcher Free.
		University of Vermont
		Billings.
	Middlebury	Middlebury College.
	Montpelier	Vermont State.
	Northfield	Norwich University.
Va.	Blacksburg	Virginia Polytechnic Institute.
	Bridgewater	Bridgewater College.
	Emory	Emory and Henry College.
	Hampden Sidney	Hampden Sidney College.
	Lexington	Virginia Military Institute.
		Washington and Lee University.
Va.	Norfolk	Public.
	Richmond	Virginia State.
	Salem	Roanoke College.
	University	University of Virginia.
	University of Richmond.	University of Richmond.
Wash.	Everett	Public.
	Olympia	Washington State.
	Pullman	State College of Washington.
	Seattle	Public.
		University of Washington.
	Spokane	Public.
	Tacoma	Do.
	Walla Walla	Whitman College.
W.Va.	Athens	Concord State Normal.
	Charleston	Department of Archives and History, State.
	Elkins	Davis and Elkins College.
	Fairmont	Fairmont State Teachers College.
	Harpers Ferry	Roger Williams Library of Storer College.
	Huntington	James E. Morrow Library of Marshall College.
	Institute	West Virginia State College.
	Montgomery	New River State College.
	Morgantown	West Virginia University.
	Salem	Salem College.
Wis.	Appleton	Lawrence College.
	Beloit	Beloit College.
	Eau Claire	Public.
	Fond du Lac	Do.
	La Crosse	Do.
	Madison	State Historical Society.
		Wisconsin State.
	Milwaukee	Public.
	Racine	Do.
	Superior	Do.
Wyo.	Casper	Natrona County Public.
	Cheyenne	Wyoming State.
	Laramie	University of Wyoming.

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